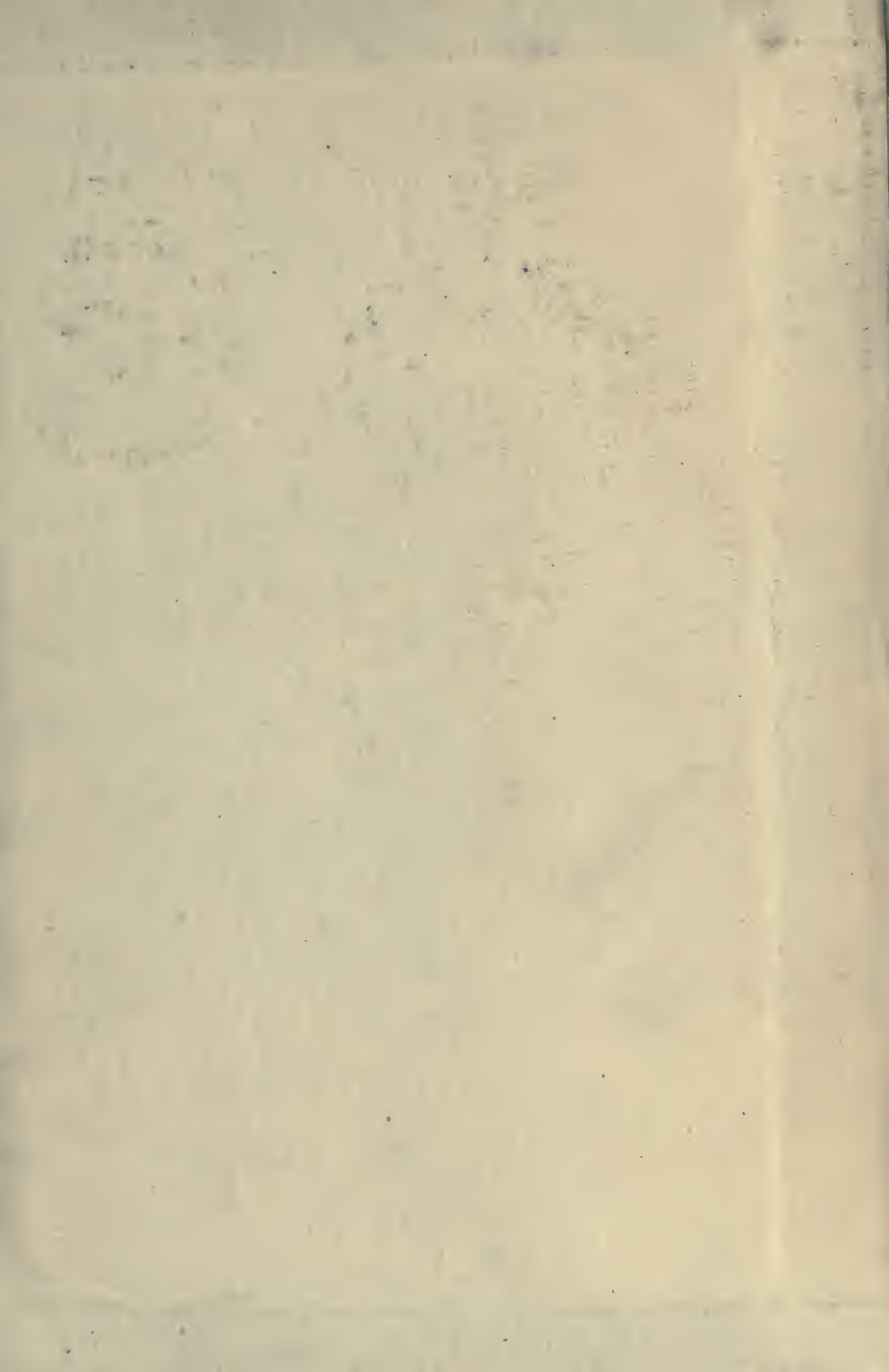
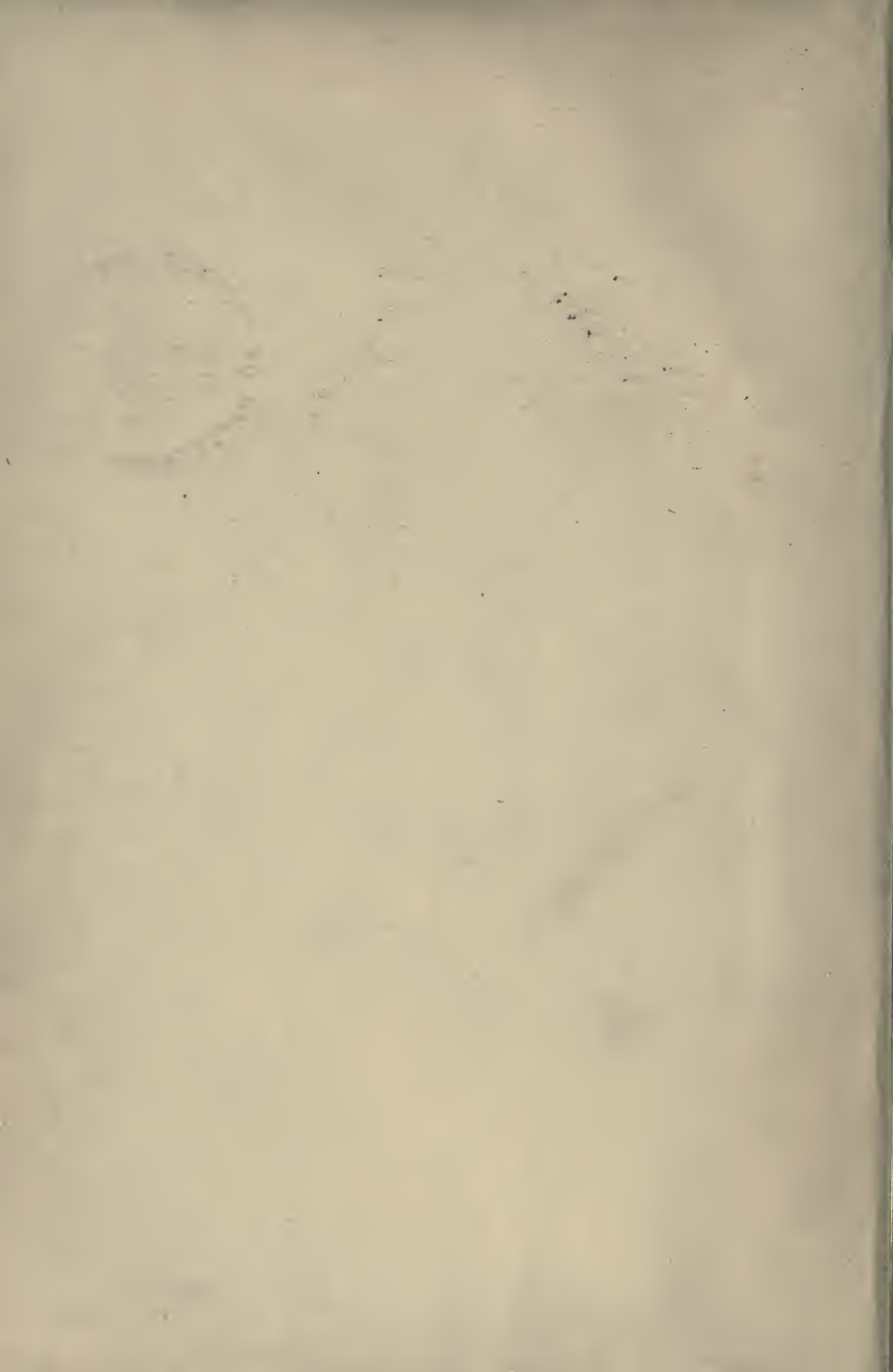


UNIV. OF
TORONTO
LIBRARY



1389.



THE NEW AMERICAN THRIFT

The Annals

VOLUME LXXXVII

JANUARY, 1920

EDITOR: CLYDE L. KING

ASSISTANT EDITOR: C. H. CRENNAN

ASSOCIATE EDITOR: J. H. WILLITS

EDITORIAL COUNCIL: THOMAS CONWAY, JR., A. A. GIESIECKE, A. R. HATTON, AMOS S. HERSEY, E. M. HOPKINS, S. S. HUEBNER, CARL KELSEY, J. P. LICHTENBERGER, ROSWELL C. MCCREA, E. M. PATTERSON, L. S. ROWE, HENRY SUZZALO, T. W. VAN METRE, F. D. WATSON

*Editor in Charge of
this Volume*

ROY G. BLAKEY, Ph.D.,

*Assistant Professor of Economics, Univ. of Minnesota,
and Recently Associate Director, Savings Division, United States Treasury Department*



157526
3/12/20

THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE,
36TH STREET AND WOODLAND AVENUE,
PHILADELPHIA,
1920



H
1
A4
V.87-89

Copyright, 1920, by
THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE
All rights reserved

EUROPEAN AGENTS

ENGLAND: P. S. King & Son, Ltd., 2 Great Smith St., Westminster, London, S. W.
FRANCE: L. Larose, Rue Soufflot, 22 Paris.
GERMANY: Mayer & Müller, 2 Prinz Louis Ferdinandstrasse, Berlin, N. W.
ITALY: Giornale Delgi Economisti, via Monte Savello, Palazzo Orsini, Rome.
SPAIN: E. Dossat, 9 Plaza de Santa Ana, Madrid.

CONTENTS

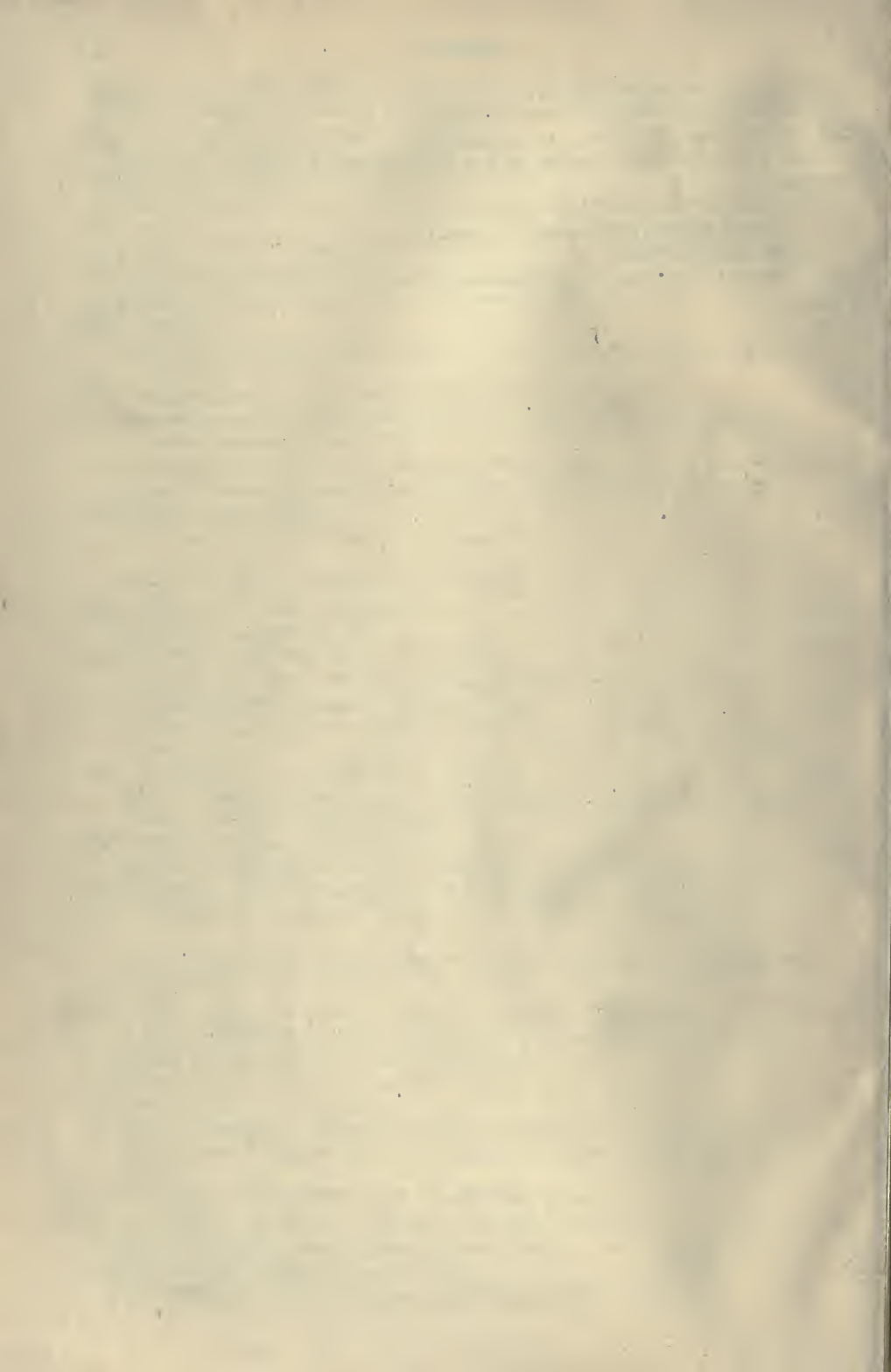
THE NEW AMERICAN THRIFT

Editor in Charge, ROY G. BLAKEY, Recently Associate Director, Savings Division, Treasury Department, Washington, D. C.

	PAGE
PART I—INTRODUCTION	
AMERICA'S NEW CONCEPTION OF THRIFT.....	1
Editorial Foreword.	
THE RELATION OF THRIFT TO NATION BUILDING	4
Thomas Nixon Carver, Harvard University, Cambridge, Mass.	
FREEDOM THROUGH THRIFT.....	9
William Mather Lewis, Director Savings Division, U. S. Treasury Department, Washington, D. C.	
PART II—THRIFT FOR THE INDIVIDUAL AND THE FAMILY	
THRIFT AS A FAMILY AND INDIVIDUAL PROBLEM—SOME STANDARD BUDGETS.....	11
B. R. Andrews, Teachers College, Columbia University, Assistant Director, Savings Division, U. S. Treasury Department.	
THE INSURANCE OF THRIFT.....	21
John A. Lapp, Managing Editor <i>Modern Medicine</i> , 50 East Washington St., Chicago, Ill.	
PART III—THRIFT FOR THE NATION	
THE NATION'S CALL FOR THRIFT.....	27
Frank L. McVey, President of the University of Kentucky, Lexington, Ky.	
WEALTH, INCOME AND SAVINGS.....	32
David Friday, University of Michigan, Ann Arbor, Mich.	
THRIFT AND LABOR.....	44
A. H. Hansen, Associate Professor of Economics, University of Minnesota, Minneapolis.	
ORGANIZED LABOR'S ATTITUDE TOWARD THE NATIONAL THRIFT MOVEMENT.....	50
Frank E. Wolfe, of the American Alliance for Labor and Democracy, 1310 Cunard Building, Chicago, Ill.	
THRIFT AND BUSINESS.....	52
George W. Dowrie, Dean of the School of Business University of Minnesota, Minneapolis.	
THRIFT AND THE FINANCIAL SITUATION.....	57
A. C. Miller, Federal Reserve Board, Washington, D. C.	
GOVERNMENTAL THRIFT THROUGH A NATIONAL BUDGET.....	65
Charles Wallace Collins, Adviser to Senate and House Budget Committees, Washington, D. C.	
PART IV—AMERICAN NEEDS FOR CAPITAL—TYPICAL EXAMPLES	
CAPITAL NEEDS FOR EDUCATION IN THE U. S.....	71
David Snedden, Teachers College, Columbia University, New York City.	
AN ANALYSIS OF THE NEED OF CAPITAL FOR TRANSPORTATION IN THE U. S.	83
Holcombe Parkes, Associate Editor, <i>Railway Age</i> , Chicago, Ill.	
AMERICAN FARMER'S NEED FOR CAPITAL.....	89
E. H. Thomson, President Federal Land Bank, Springfield, Mass.	

CAPITAL NEEDS FOR AMERICAN INDUSTRIAL DEVELOPMENT.....	95
Francis H. Sisson, Vice-President, Guaranty Trust Co. of New York.	
CAPITAL NEEDS OF FOREIGN TRADE.....	100
Thomas W. Lamont, J. P. Morgan & Co., New York City.	
MEMORANDUM ON THE ECONOMIC SITUATION.....	106
Herbert Hoover, Director Allied Relief Administration, Stanford University, California.	
<i>PART V—THRIFT IN RESOURCES AND IN INDUSTRY—TYPICAL EXAMPLES</i>	
WHAT FUEL CONSERVATION MEANS TO AMERICA.....	112
Robert W. Woolley, Interstate Commerce Commission, Washington, D. C.	
FOOD THRIFT.....	118
Raymond Pearl, Department of Biometry and Vital Statistics, The Johns Hopkins University, Baltimore, Md.	
THE GARBAGE PAIL, A NATIONAL THRIFT BAROMETER.....	128
H. L. Baldensperger, Sometime Executive Officer, Salvage Division of U. S. Army, University of Pennsylvania, Philadelphia.	
THE FUNCTION OF SALVAGE IN THE EDUCATION OF INDUSTRIAL WORKERS.....	136
George W. Sherman, Manager Salvage Department, B. F. Goodrich Co., Akron, Ohio.	
EFFICIENCY AND THRIFT.....	142
W. R. Conover, General Electric Co., Schenectady, N. Y.	
<i>PART VI—THE INVESTMENT OF SAVINGS</i>	
REQUISITES OF A GOOD INVESTMENT.....	151
Albert W. Atwood, Princeton, N. J.	
SPECULATION AND THE SMALL INVESTOR.....	155
Theodore H. Price, Editor of <i>Commerce and Finance</i> , 65 Broadway, New York City.	
U. S. GOVERNMENT BONDS AS INVESTMENTS.....	158
J. E. Cummings, University of Minnesota, recently of the U. S. Treasury Dept. Minneapolis, Minn.	
THE DEVELOPMENT OF THRIFT FACILITIES.....	168
Milton W. Harrison, Executive Manager, Savings Banks Association of the State of New York, 56 West 45th Street, New York City.	
COÖPERATIVE CREDIT INSTITUTIONS IN THE U. S.....	172
James B. Morman, Assistant Secretary, Federal Farm Loan Board, Washington, D. C.	
LIFE INSURANCE IN ITS RELATION TO THRIFT.....	183
S. S. Huebner, Professor of Insurance, University of Pennsylvania, Philadelphia, Pa.	
<i>PART VII—THE PROMOTION AND PRACTICE OF THRIFT IN DIFFERENT COUNTRIES</i>	
PROMOTION AND PRACTICE OF THRIFT IN FOREIGN COUNTRIES.....	190
S. W. Straus, President of American Society for Thrift, 150 Broadway, New York City.	
NATIONAL SAVING IN THE UNITED KINGDOM.....	197
William Schooling, C.B.E., National War Savings Committee, London.	
THRIFT IN THE UNITED STATES.....	205
George F. Zook, Head of Department of History, Political Science and Economics, Pennsylvania State College, recently with U. S. Treasury Department, State College, Pa.	
<i>PART VIII—SUGGESTIONS FOR PROMOTING THRIFT</i>	
PSYCHOLOGICAL NOTES ON THE MOTIVES FOR THRIFT.....	212
Edward L. Thorndike, Teachers College, Columbia University, New York City.	
THRIFT IN THE SCHOOL CURRICULUM.....	21
W. H. Carothers, Professor of Education, State Normal, Emporia, Kansas.	

THE CONSUMER'S RESPONSIBILITY.....	225
Hartley Withers, Editor of <i>The Economist</i> , London.	
THE PROMOTION OF THRIFT IN AMERICA.....	233
Alvin Johnson, Editor <i>New Republic</i> , 421 West 21st Street, New York City.	
APPENDIX.	
TWO THRIFT TABLES (Mathematical).....	239
Miles M. Dawson, 141 Broadway, New York City.	
BRIEF BIBLIOGRAPHY.....	243
George F. Zook, Pennsylvania State College.	
INDEX.....	245



America's New Conception of Thrift

FOREWORD

FOR many years prior to the Great War the term thrift carried to the minds of many Americans several unfortunate connotations. It was frequently associated with parsimony, niggardliness, miserliness and other traits which every liberal and generous-hearted American properly thought very unbecoming to one who shared the bounteous resources, the great opportunities and freedom of the Western World. But the tremendous struggle which threatened not only to shackle the Old World, but even to rob the New World of its cherished liberties brought home to our people a new conception of thrift, in fact, an appreciation of true thrift and a realization of the fatal consequences of clinging to old misconceptions.

Many realized for the first time that it was a matter of life and death to thousands of soldiers and of civilians also, whether they wasted or whether they conserved food and fuel; whether by demanding non-essentials they diverted labor, materials and machinery to making these non-essentials, or whether they freed this labor to fight in the trenches or to supply those who fought, or to feed and clothe those who supplied the fighters. We learned of our economic unity and interdependence as never before, we saw that the real army consisted not only of the men in uniform, but of the entire people who supported them. Anybody who wasted or misdirected the use of labor or materials or machinery or land or any other productive factor was a public enemy for, by so doing, he weakened the forces in the front

lines or, what was just as important, the great civilian army behind the trenches.

Food that went to the garbage pail and labor that was idle represented only the most obvious kind of waste. Brain, brawn, material and equipment that were misdirected, that were used for second-class purposes when they could have been used for first-class purposes, were to that extent wasted. On the proper use of these capacities and resources hung not only the life and death of the soldiers and civilians but, also, the progress of civilization itself.

Thrift was thus impressively shown to Americans in its true light. Instead of suggesting stinginess, it came to connote *proper use*, the use of means in such a way as to achieve the greatest results. It was closely associated with effectiveness, loyalty, patriotism, victory. It took a new place, an exalted place, its true place in popular estimation.

Though the call for thrift, that is, the proper use of capacities and resources, was more dramatic and insistent during the war than it is in peace time, nevertheless, its importance for the long run happiness of the race was no greater then than it is now. It is true that economies and sacrifices that were needed then would not be justifiable now. Proper use always implies adjustment and adaptation to existing circumstances and conditions, and this requires that an eye be kept on the future all the while.

Man is so constituted that he has a recurring series of wants. Regardless

of how much food he may have on hand he cannot eat enough today to satisfy his hunger for all time. He requires a constant stream of income in the form of food, clothing and fuel, to satisfy his needs. As certain primal needs are satisfied, other desires make themselves felt and he is stimulated to produce more things to satisfy these desires also. For all practical purposes, man's wants seem capable of indefinite expansion. The satisfaction of all of them requires an indefinite expansion of production, not an indefinite increase in the production of bread for any one man, but after sufficient bread, then better bread, better clothes, better houses, automobiles, aeroplanes, music, painting, literature, leisure to philosophize, to think on higher things.

That individual, that family or that nation which consumes daily or yearly all that it produces can never progress. If it considers today only, if it takes no thought of the future, it is doomed to stagnation if not to death. But by devoting part of current energy to producing tools and other equipment, the productive capacity of following years is increased, and it soon becomes possible to satisfy more and more current wants and at the same time to devote more energies each year to the increase of equipment. This process is cumulative.

The increase of productive capacity through the improvement of health, technical skill and education is just as important as the increase of machine equipment or land fertility. In fact, the piling up of highly perishable goods can not go very far and the accumulation of durable consumption goods like clothing, houses, and even machinery, can conceivably be pushed beyond practical limits for any given

set of conditions. We are at present, however, far distant from such limits. In truth, they are beyond our present horizon, so that no one has cause to fear that we may become over-thrifty. It is true, however, that real thrift means devoting more and more attention to the development of the capacities of the human machine, not only its capacities for producing material goods but also its capacities for producing and enjoying the highest things of life.

In our careless thought and speech much passes for thrift that is not thrift. The Italian immigrant who starves his wife and takes his fourteen-year old boy from school to put him in a factory that he may help pay for a new home little knows the meaning of thrift. The father who sends to college his son who does not have the capacity to take advantage of his opportunities does not practice true thrift. The state which has an educational system poorly adapted to the needs of its children is not thrifty. The nation or society which, through lack of foresight, allows its governments to spend money recklessly, its railroads—the arteries of its industrial organization—to become almost hopelessly clogged, its great mass of working humanity and its captains of industry to get at such cross purposes that only 50 per cent to 75 per cent of possible production is realized while millions want and thousands actually starve for the necessities of life—that nation, society, or world certainly has some lessons to learn about true thrift.

We are so busy with the day's work that we neglect the future. The business man who is most intent upon making money, the banker who is particularly thought of as being most thrifty, the educator and the so-called states-

man who have no real vision are all akin to the thriftless fellow who is happy if he has a supper tonight, regardless of what the morrow may bring.

In fact, most of us are so absorbed with the things immediately before us that we do not have time to attend to our most important concerns. Every two years we elect to Congress and our legislatures men nominated by interested parties, or hale fellows well met, rather than take the time to attend the primaries and see that properly qualified men are nominated. Our civilization with its industrial, political and social organization has become so complex that our old machinery will not function efficiently and we are too busy to study the problems seriously and too short sighted to put in positions of responsibility men who are best qualified to guide us. After we elect our representatives, we do not let them concentrate their energies upon matters of moment. We fritter away their time by making them petty servants to look after pensions, allotments, appointments, post office buildings, river and harbor improvements and other matters of local interest. As a result they do not have time to consider duly how that this legislation or that legislation, or the lack of it, will stir the nation or the world from its foundations. For example, they do not see until it is too late, that the easy loan policy of financing a war carries with it the risk of upsetting standards of living, wages, and the whole industrial organization. The lack of a little foresight and judgment may easily nullify a generation of thrift education,

it may even throw the world into confusion.

Little wonder that domestic affairs run amuck, that civilization barely escapes annihilation. Possibly those who profess to be our leaders should receive the greatest censure. To them we look for guidance, but all of us are too much inclined to shift the blame. We ourselves are all responsible for selecting our leaders and hence for our leadership. Because of our lack of vision in the past the world has run riot.

But we are awaking to a realization of our plight. We are still groping to find our way out, but we are getting new ideas of industrial and social efficiency. We are coming to see that for a nation to prosper, to thrive in the true sense, thrift must mean much more to us than it has in the past. We are coming to learn that the essence of thrift lies in seeing the present and the future in their true relations, and then using all available means in such ways as to attain the greatest sum total of human welfare. This implies foresight, an appreciation of relative values and consequently of things most worth while, as well as some conception of practical methods of attaining them. We are coming to appreciate as never before that, "Where there is no vision the people perish." And so America has a new conception of thrift. Her people are less concerned about saving *per se*, but they are more concerned about conservation and proper utilization as a means to greater service, greater welfare and greater happiness.

ROY G. BLAKEY.

The Relation of Thrift to Nation Building

By T. N. CARVER

Harvard University

THE problem of the efficient use of the laborer's time and working energy has not been without interest to business managers, and even to statesmen. To find easier and quicker ways of doing whatever the laborer has to do is to increase the national production and prosperity. All this is as true of every factor of production as it is of the laborer himself.

DIRECTION OF PRODUCTIVE POWER

It is just as important that productive agents should be doing the right things as that they should be doing whatever they happen to be doing with the utmost speed and facility. To misdirect our productive power, causing it to produce things of little importance, is quite as great a loss, and quite as great a hindrance to our prosperity, as to allow it to do things in a wasteful and slipshod manner. To direct it wisely, so that it is always producing the things of greatest permanent value, is to increase and perpetuate our national prosperity.

Important as this problem is, it has not yet attracted much of the attention of business managers. They are generally more intent upon the volume of the output than upon the character of the things produced.

One of the most important things we can possibly do with our productive power is to make it add to itself, so that it may grow from year to year. This can only be done by setting a part of it at work producing producers' goods, instead of keeping it all at work producing consumers' goods. If very

little of it is directed toward the making of tools, machinery, buildings, fences, irrigation ditches, and other forms of productive equipment, our means of production will increase very slowly or not at all. If our means of production does not increase, our productive power cannot. If, however, a large enough share of our productive power is engaged in producing producers' goods, we shall, of course, find ourselves in possession of more producers' goods, larger and better equipment of all kinds, and that, consequently, our productive power is increasing from year to year, and from decade to decade. If, for example, 50 per cent of our productive power is engaged in making tools, machinery, and equipment, these things will obviously increase more rapidly than if only 10 per cent of our productive power is so engaged while 90 per cent is producing things for immediate consumption.

PRODUCTION AND DEMAND

In the present state of civilization, with our money economy, men generally try to produce what people are willing to buy. If very few people are willing to buy tools, machinery, and equipment; or if very little money is spent for such things, very few will be produced. If much money is spent for such things, many will be produced. If half the money spent in the country were spent for tools, machinery, and equipment, approximately half of our productive power would be engaged in making such things. If only one tenth of the money is spent in purchasing

such things, not much if any more than one tenth of our productive power would be engaged in making them. It would be a very thrifty nation half of whose purchases consisted of instruments of production; it would be a rather thriftless nation one tenth of whose purchases consisted of such things. The former would advance rapidly in productive power, the latter slowly. The former would have much more to spend from year to year, the latter little, if any more.

It is, therefore, just as important that the people of this country spend their money wisely, as that they utilize their labor power efficiently. To throw money away, or dump it into the sea, is no great loss to the nation, however much of a loss it may be to the individual who owns the money. The material is lost, and that is all. When it is spent, however, instead of being thrown away, it virtually hires men to make the things for which it is spent. If it is spent wastefully, it virtually wastes the working energy of the men whom it hires. That wasting of man power is a much more serious thing than the mere loss of money.

THE NATURE OF THRIFT

There is a widespread fallacy to the effect that extravagance gives employment to labor. This fallacy is probably due to the opinion that thrift consists in hoarding money or hiding it away. This, however, is not thrift at all. To hide money away, and keep it out of use, is a very thriftless thing to do. The thrifty person is not a miser. He is one who spends money just as freely as the extravagant man, but he spends it wisely instead of unwisely. He spends it for durable things, instead of for transient things. He spends it for things which increase his

strength, physically, mentally, morally or financially, instead of for things which add nothing to his strength in any way.

When we realize that thrift consists in spending money wisely, instead of unwisely, we shall very easily see that the thrifty man spends exactly as much money as the thriftless man, provided he has as much money to spend. Moreover, in the long run, the thrifty man will spend more, because he will have more to spend than the thriftless man; and the thrifty community will be a community in which more money is spent than in the thriftless community. If anyone doubts this statement, let him ponder the following illustration.

Let us suppose that there are two communities which we will call Thrift Town and Spendthrift Town, and that these two communities start even, that is, that they have equal numbers, equal resources, and equal prosperity at the beginning of the comparison. Let us suppose that in each community there is, this year, a total income of \$1,000,000. This \$1,000,000 represents all that the community produces, and consequently all that it has to spend. Thrift Town finds that it can live comfortably and efficiently on nine tenths of its income, that is \$900,000, and decides to spend \$100,000 for permanent improvements,—improvements that will add to its productive power next year and the year after. Spendthrift Town, however, decides to spend its whole \$1,000,000 on consumers' goods. It will be noticed that the same amount of money is spent in both towns. The difference is solely in the class of things for which the money is spent. Spendthrift Town spends \$1,000,000 for consumers' goods. Thrift Town spends \$900,000 for con-

sumers' goods, and \$100,000 for buildings, machinery, tools and live stock,—a total of \$1,000,000 spent for goods. Next year, however, Thrift Town will produce more than Spendthrift Town. That is, Spendthrift Town will have its \$1,000,000 worth of product,—its people will have \$1,000,000 to spend. The buildings, tools, machinery, live stock, etc., which Thrift Town added to its equipment will add to its productive power and to the income of its people during this year. If this \$100,000 produces an average of 5 per cent on the investment, the total income of Thrift Town during the second year will be \$1,005,000. There will be \$5,000 more spent during the second year in Thrift Town than in Spendthrift Town.

If Thrift Town continues living on nine tenths of its income, spending the other tenth for permanent equipment during the third year, there will be a still greater difference in the amount spent in the two towns. Thrift Town will have a little over \$1,010,000, whereas Spendthrift Town will still have its \$1,000,000 to spend, and so on, year after year, the difference will grow greater and greater. It will not be so very many years under this policy before the young men and women from Spendthrift Town will be leaving that town and emigrating to Thrift Town, because business is more active and there is more employment at better wages.

If the figures for Thrift Town and Spendthrift Town are too large for us to grasp easily, we can simplify the problem by taking two individuals, A and B. Assume that they have equal incomes at the beginning, but A is thrifty and B is thriftless. Let us suppose that this year they have incomes of \$2,000 each. A finds that he can live comfortably and efficiently

on \$1,800 and that he can invest \$200 in some productive enterprise. If he is a farmer, he can buy an additional cow or horse, or some improved tools and machinery. If he is a business man, he can add somewhat to his stock or equipment. If he is a salaried man, he can deposit his \$200 in a savings bank and receive 4 per cent on it.

The savings bank, however, cannot pay interest on this money unless it uses the money or lends it to somebody who can use it. Suppose it lends \$200 to a farmer or a business man who buys additional equipment with it. In this case that \$200 is spent just as truly as it would have been if A had spent it directly for luxuries. There are only two differences. In the first place, he spends it indirectly through the bank instead of directly. In the second place he spends it for producers' goods instead of for consumers' goods. In either case, next year A will have not only his \$2,000 salary, but \$8.00 interest on his investment, making a total of \$2,008 to spend, whereas B will have only his \$2,000 to spend, and so on. The difference grows greater every year. A will have more and more money to spend every year. He will do more for business and give more employment to labor than B will give.

This difference becomes enormous if we multiply the A's and B's by a hundred million. In other words, if our total population is made up of men like A, there will be a vast increase year by year in the amount of money we have to spend. But if our total population is like B, there will be no such increase in the amount of money we have to spend. Business will not expand; there will not be additional employment, calling for more and more men. It is for the average citizen to decide which kind of a nation this is to

be; that is, whether it is to be a nation of A's or a nation of B's,—whether our nation is to be an enlargement of Thrift Town or an enlargement of Spendthrift Town.

If, however, the thrifty man were sly and unprincipled as well as thrifty, he might, consistently with his slyness and lack of principle, discourage thrift. Being thrifty himself, he is not buying consumers' goods but investing in means of production with which to supply the demands of others for consumers' goods. The fewer there are doing as he is doing, the fewer competitors he will have. The more there are who spend all their money for consumers' goods, the more immediate customers he would have. Therefore, he might very consistently, though short-sightedly, argue as follows:

"There is already capital enough in the country (at least there is as much as I want to compete with my capital in my business), what we need is more consumers. If all the people of the United States should suddenly resolve to follow the course you have marked out and should carry out their purpose, the results would be disastrous in the extreme. What is left of the liquor business would be wiped out. The manufacture and the sale of all forms of tobacco would cease. The same fate would befall a multitude of other lines of business producing or dealing in luxuries or non-essentials of various kinds.

"As a consequence of these first effects many others would follow in their train. A situation somewhat like that which now prevails in this country by reason of the cancellation of government orders and contracts and the demobilization of the army,—only many times as serious,—would speedily develop. Merchants would

go into bankruptcy by the thousands, manufacturing plants would close and millions of employes would be thrown out of employment. Of course, it would be possible to support the unemployed by taxing the rest of the community or by sale of bonds, using the proceeds as a temporary unemployment insurance fund. This would be a more or less demoralizing process, however, and the waste of it would be appalling.

"In the course of time, factories and stores could be adjusted to other lines of production or use, though the waste of specialized construction and equipment would be enormous. During a considerable part of the transition period, all the savings effected by the changed habits of the people would be consumed in supporting an idle population and in making necessary changes in the production instruments. Even when these physical changes had been made and opportunities for employment had been provided, it would take a long time to train the workers to their new jobs, if, indeed, many of them had not through idleness and dependency become unemployable. In any case, there would be a tremendous loss in the way of acquired skill rendered useless by the changes in the habits of consumers."

All this, however, would be obviously nonsensical because, as we have already seen, thrift consists in buying wisely rather than unwisely, and wise buying enables the people to spend more money than unwise buying. To buy something that does you no real good, does not put any more money into your pocket next month, next year, or the next generation. To buy something that is of permanent benefit, will give you or your children more money to spend in the future and you

will spend quite as much now as you could possibly spend if you bought foolishly. He who spends a dollar wisely does just as much for the labor and the business of the present moment as he who spends a dollar wastefully. Next year, however, the man who spent his money wisely this year, will have more dollars to spend, on the average, than the man who spent his money wastefully. Therefore, the wise spender will do more next year for business than the wasteful spender and quite as much this year.

The thrifty man is, in the long run, the man who buys and buys largely.

The thriftless man is the man who never buys very much, because he never has very much money with which to buy. The way to insure large buying, on an increasing scale from year to year, a steady expansion of business, and a continued increase of employment, is to get behind the thrift campaign.

Remember that thrift consists in buying, but in buying wisely. Urge every one, if you please, to buy and to buy now, but **URGE HIM TO BUY THINGS THAT WILL GIVE HIM MORE BUYING POWER NEXT YEAR AND EVERY YEAR.**

Freedom Through Thrift

By WILLIAM MATHER LEWIS

Director Savings Division, United States Treasury Department

WHO won the Great War? Thinking men are beginning to believe that the real answer to this question may not be forthcoming for ten or twenty years. They are realizing the fact that in the final reckoning success in reconstruction is a factor well nigh as important as that of success in battle. America may yet be the loser if she does not learn from the titanic conflict lessons that will make all she has suffered worth while.

Where there is no vision the people perish. America today faces the mightiest problems of her existence. Her chances of solving them lie in the power of her people to think straight and to act wisely and to see clearly through to the end. Her destiny lies in her vision. Nothing in all our history has revealed the American people to themselves as did the Great War. Then it was that we glimpsed the elements that go to make a mighty and enduring nation. One of these elements was revealed in the achievement of the nation in the great conservation movement directed by Herbert Hoover. We supplied our armies and our suffering allies with ample food by diverting to good purposes material ordinarily wasted or at best extravagantly used.

Again we found another element of strength in the popular financing of the war by millions of our people, the great majority of whom, before they patriotically interested themselves in Liberty Bonds, never realized that they could set aside any portion of their incomes for investment.

In the achievements of Herbert

Hoover and in the success of the Liberty Loans, we see the sign-posts pointing to established victory, to national and individual freedom, and these sign-posts are marked THRIFT. The vast majority of the American people have not been free; they have been weighed down with the shackles which make progress toward the goal of success painful and slow. Overhanging obligations, fear of old age, monotonous toil: these things have hampered us; these things have kept us strangers to freedom. Longfellow's "village blacksmith" typifies personal freedom: "He looks the whole world in the face for he owes not any man."

America, founded on the principle of freedom, has never made a concerted effort to interpret that word into terms of financial independence. Thus it has come about that while our individual earnings have averaged the highest of any nation in the world our average savings have been proportionately small. Set down in a land of unequalled natural resources we have, because of the ease of production, become criminally wasteful. Forests have been razed and no effort has been made to replace them; fields have been half cultivated, plows have been left to rust in the furrow. Thrift has been unpopular because we have felt that it was not necessary and because it has been confused with stinginess and smallness, qualities which our people hate. But in reality how different it is from the popular conception: thrift is care and prudence in the management of one's affairs, the foundation

upon which every successful and enduring business enterprise is based. This great principle has, however, been nationally ignored, despite the fact that a vastly increasing population has reduced our national resources to a startling degree.

During the war we caught the vision of the power of thrift. We accustomed ourselves to doing without; to buying carefully and using economically. To-day the reaction from that policy is wide-spread and disturbing. A veritable orgy of extravagant buying is going on—reckless spending takes the place of saving; waste replaces conservation; demands for shorter hours and greater profits increase; and all this in the face of an appalling shortage of goods throughout the world.

One hope of righting these conditions lies in adopting the principle of thrift, whose value the war impressed upon us. Suppose that for a year, the American people would insist on getting a dollar's worth for every dollar they spent; suppose they used the material bought with care and intelligence; suppose that the first dollar out of every pay envelope was saved instead of being spent in thoughtless purchases, what would be the result?

Production would be given a chance to catch up with consumption, the high cost of living would be materially reduced, debts would be paid and every phase of our economic situation would

be improved. More than that, we would be well on the road to winning the war by showing a strength and stability and intelligence which our enemies now believe lacking—a lack which they are counting on to enable them to win commercial victories over us in the markets of the world.

The Treasury Department in advocating national thrift is doing more than bettering individual conditions; it is strengthening the hands of our government—it is going far to complete the victory. That man who saves must learn to put his money aside in safe, productive investments. He must learn the principles of finance or his saving will profit him little. The Treasury Department, through its savings stamps and Treasury Certificates and Liberty Bonds, offers a means of investment sound and sure and profitable. More than that, it offers a means for every one of our citizens to become a stockholder in the government. A stockholder will not throw a brick through the window of his company or apply the torch to the warehouse. He will work to strengthen and to make it more prosperous. National thrift culminating in the steady purchase of government securities will go far toward answering the question, Who won the Great War? It will also put America well on the way to the realization of the finest conception of freedom.

Thrift as a Family and Individual Problem

Some Standard Budgets

By BENJAMIN R. ANDREWS

Teachers College, Columbia University; Assistant Director, Savings Division, United States Treasury Department.

THRIFT is a means to the best life for individual and family as it insures that considered use of resources which will promote well-being. There is a current idea that the thrifty man is stingy and penurious but rightly understood thrift means intelligence, forethought and plan in the use of resources, so as to promote personal well-being. In practice thrift calls for effective functioning on the part of the individual in the following economic relations:

1. As one who earns, by increasing skill or output so as to enlarge money income or its equivalent.
2. As one who spends, by studying one's present needs so as to secure goods and services bringing the greatest possible satisfaction at the least possible cost.
3. As one who saves, by examining one's future needs so as to set aside funds liberally for all its contingencies.
4. As one who invests, by considering the placing of savings so that they will grow by interest or by increase of value and yet so that principal and interest will be secure against loss.
5. As one who conserves whatever he has, by considering its wisest use so as to secure the greatest possible satisfaction from it, by avoiding waste, and by treating what is bought with money as though it had money's value. Thus there arises a five-fold

thrift problem of the individual and family as regards earning, spending, saving, investing and conserving.

THRIFT AND INCOME

Thrift seeks to increase personal and family income, which fully considered involves several factors.

Money Income

Money currently received, whether from wages, salary, rentals, interest, or profits, is usually the only thing considered under the term "income," and these current money receipts are the most important element to consider in income. It is these which have attention in drafting a budget schedule of income and proposed expenditure which is, perhaps, the most efficient single measure for promoting personal thrift. Thrift asks certain questions concerning money income such as: Am I earning all the money I reasonably can? How can I increase my skill or output so as to receive more? Is there a possibility of additional money income not yet realized by members of our family? Ought we to be receiving an income on investments? Would it be economy to invest capital in education or special training to increase earning power?

Real Income

But "real" income, or the flow of satisfaction enjoyed from day to day, includes important elements not pur-

chased through current expenditure and meriting attention in any attempt to increase income. These additional factors in income include specifically:

(a) *Use-income*, or the equivalent of money income arising from the use of permanent consumption goods owned, such as the home and its furnishings, clothing, and other personal property, the pleasure car, etc. Thrift would seek to increase our use-income by asking and answering such questions as: Can we by directing expenditure toward better permanent consumption goods increase our real income through all the future? Shall we own our own home? Does it require different furnishings? What do we possess that our parents or grandparents by wise purchase secured as a satisfaction lasting for generations? Have we ever bought anything that similarly can be happily "handed down?"

(b) *Social income* received by individual and family through the use of goods and services furnished by the community and state, is another factor in "real" income. It includes such items as education, public health service, public recreation facilities. Some of these items are actually bought by expenditures in the form of tax payments, but many of them have long since been paid for, yet are still yielding social use-income to the individual and family. With regard to this factor in income, thrift asks: Do we realize the possibilities from available community services and goods, making them replace in part personal expenditures, for example, as regards music and books? Can the community supply us with other goods more cheaply than we can do it individually?

(c) *Labor income*, or the equivalent money value of unpaid services rendered by one's self and other members

of one's family, particularly by the housewife, is an important contribution to the real income of a family. It often increases by 100 per cent or more through household processes the value of materials bought for household consumption. A family is supported in reality often as much by the unpaid useful work of the household as it is by the money brought in by the outside wage-earner. Thrift raises such questions as these: Have we regarded this factor of income at its real value? Can its value be increased by better housekeeping skill, by an investment in better household working equipment, by training children to coöperate in the household? Or in families where there are no children, is it possible to increase the family income by reducing or eliminating the contribution made by the housewife's work and substituting for it wages which the one so employed might secure through outside employment? Is it possible to increase the income by taking on certain productive activities in connection with the household, as a garden?

In short, the principles of thrift applied to the problem of income suggest a critical examination of all sources of income whether in the form of money, or of money's worth. Such an examination can best be made by a written schedule listing sources of income and amounts now received, including not alone money income, but also use-income, social income and labor income. Such a complete income schedule is a useful thrift device, in and of itself; the items of money income will, of course, be carried over into the budget of income and outgo.

THRIFT AND EXPENDITURE

In an urban civilization money is given in exchange for practically all

satisfactions so that rational spending means rational living. Thrift in spending seeks to increase the satisfaction from the use of money having in view all the interests of life and its future as well as its present needs. Much spending is done in a haphazard way on the impulse of the moment save as income limits expenditure and the relative costs of food, clothing, housing, etc., force an adjustment of spending along certain lines. Thrift substitutes a plan based on foresight and a candid examination of needs for an impulsive ill-considered spending.

GENERAL SUGGESTIONS FOR EFFICIENCY IN SPENDING

Written Budget Plans.—The study of standards of expenditure as found in the experience of others is helpful. Engel stated certain economic laws of consumption, the more important of which are that the smaller the income the larger the proportion of it which must go for food and that as income increases food expenditure relatively decreases and the allowance for miscellaneous culture wants increases. A widely quoted American standard for middle class incomes is "the ideal budget" of the late Ellen H. Richards which allows one-fourth of the income for food, one-fifth for rent, one-seventh for household operating expenses, one-seventh for clothing and one-fourth for culture wants or the "higher life." In the appendix are printed certain suggested standard budgets, but the individual must remember that such standards are suggestive only and that he must work out his own best division of income. Written budget plans for expenditure are a natural result of studying standard allowances. They should be based upon all the available facts as to one's own past experience

in spending, modified by standard budgets so as to secure better distribution than one has been following.

Written accounts of expenditure, at least during periods of readjustment, are desirable. Needs for expenditure should have critical examination. The classical division of wants into necessities, comforts and luxuries gives a starting point. Another useful classification divides wants into those of self-existence, self-gratification, self-improvement and self-denial, or the provision for the future. Thrift would provide adequately for self-existence but only to a limited extent for self-gratification before making provision for self-improvement and saving. Future needs project themselves into the present whenever one thoughtfully considers the expenditure problem and lead to the provision for saving discussed below. Needs may well be classified also as regards the different members of the family group. For example, children need allowances for education, recreation, etc., and a nice allotment of available funds to meet the particular needs of each person in the family requires careful balancing of the factors involved.

Intelligent direction of spending will increase its efficiency. This function naturally centers in the housewife but often certain responsibilities may be wisely assigned to others. Increased special knowledge on the part of the spender is now possible when shopping information is available in printed form and courses in marketing are a part of extension teaching for adults. In a matter like the purchase of food, clothing, shelter and other goods in the market with which every individual has life-long contacts, it is astonishing that the general level of intelligence is not higher.

Social organization for thrift in expenditure is always possible and is being constantly tried in the form of neighborhood marketing clubs, coöperative stores and similar undertakings. As agricultural coöperation failed until the agricultural colleges began to train managers for shipping associations and other coöperative enterprises, so it is possible that consumers' coöperation will meet with success when better leadership is afforded. Economic conditions certainly favor such enterprises now as never before.

Thrift in Special Objects of Expenditure

The special objects of expenditure may well be examined in terms of the usual family budget divisions, food, clothing, shelter, household operating expenses and culture wants. Under each of these headings a few questions are given which may bring suggestions to the person reviewing his own expenditures with a desire of securing a better distribution of income and increased saving. Other problems will readily occur to such a person.

In food expenditure, thrift requires that the purposes of nutrition be adequately met, including the growth and maintenance of the body and the production of energy, and that this be done at a reasonable cost. It asks such questions as: Does each growing child have a pint or more of milk each day? Are necessary mineral constituents and growth-promoting vitamins provided? Is variety of diet guaranteed by including food from all five groups,—grain products, fruits and vegetables, meats, sugars and fats? Is there an adequate quantity to supply the calories for energy? Is there sanitary care and storage for food? Are there preventable food wastes?

Do finicky food habits add to cost? Is food cost reasonable? Is quantity buying followed where practicable? Are stores selected for economy as well as convenience?

In clothing costs, thrift promotes economy by such queries as these: Is clothing chosen so as to promote health and secure length of service as well as "for looks?" Does fashion increase clothing costs beyond reason? Have you found the economy of choosing fabrics of intrinsic quality and standard designs and garments made up in a moderate mode which permit their use through several seasons until their entire value is secured?

In housing, thrift stands for adequate provision as to space, light, air, arrangement of rooms for ease in house work as well as to meet the personal and social needs of the family group. It raises such questions as: Is there any better investment than owning one's own home? Are we spending unnecessarily for display in the house? Have the children's housing needs had as full recognition as the social standards of the adults?

In household operating expenses, thrift demands adequate heating, lighting, water-supply and housekeeping supplies. It justifies hired service where the housewife has other useful employment or is unable to do all the work. It raises such questions as: Can supplies be bought cheaper in quantity? Is the heating and lighting system efficient and economical? Is the telephone justified, and if so, is postage a cheaper substitute for many toll calls? Do the members of the household coöperate fully in reducing the burden of daily household tasks which come upon the housewife or her hired substitute?

In culture wants, thrift emphasizes

their importance as compared with material wants and asks full provision for education, for personal development and for health, and reasonable provision for physical and mental recreation, for necessary expenses for personal care and for incidental needs. But thrift asks: Are large personal indulgence expenditures justifiable? Do they not give special treatment for one or more members of the family as compared with others? Is special musical or art instruction to an ungifted person wise? Should recreation expenditures exceed cultural expenditures of the sort which, for lack of a better term, are called educational and ethical?

THRIFT AND SAVINGS

Saving may be simply spending in the future—setting aside present income for future concrete needs which overshadow lesser present concrete needs. Or, saving may accumulate a sum such that its income alone may be used in the future, or even the income from savings may itself be saved and invested. Individual savings as a matter of fact are in large part permanently invested and never spent so that savings are a large source of the nation's capital, but in individual economy saving is ordinarily abstaining from expenditure now in order to make possible later spending. You would rather have an income in old age than go to the theatre every night now and so potentially recreative expenditure is transferred to the retirement fund.

DEMANDS WHICH ENCOURAGE SAVING

Thrift requires a definite facing of the chief future demands for which present saving is desirable, a determination of the amounts necessary to be saved, and definite plans for regular

saving. Some of the chief needs for saving are the following:

Family group life brings occasional demands which call for previous saving, for example: the initial cost of setting up housekeeping; the special costs connected with children, their birth, their up-bringing, their education, launching in life and marriage; severe sickness of members of the family; care of dependent relatives; funeral costs.

Life in industrial society brings certain situations that require larger funds than current wages will supply and hence require saving. Such situations are entrance into trade or business; changing one's employment; interruption to earning through financial or industrial depression, through labor conditions, industrial accidents and other causes; the need of capital for use in independent enterprise, or industrial disability due to old age.

Saving to pay debts may be necessary: debts for past living expenses; mortgage payments on home or other real estate; payment of personal loans and debts as for education, sickness, etc. Debt paying in many cases is the obverse of saving. In saving we abstain from present spending to provide the cost of supplying future needs; in debt paying, we abstain from spending to provide the cost of supplying past needs. Debt paying for which one gets a permanent good in return, for example, paying a mortgage on real estate, is, however, really a form of investment. Saving for investment income may be undertaken for economic security, or to improve one's social condition by establishing a family fortune.

Expensive consumption goods may furnish the goal that stimulates saving, for example: buying a watch; expensive wearing apparel such as furs

or jewelry; special house furnishings, such as furniture of finer quality, pianos, phonographs, paintings, etc.; articles of recreation, bicycle, motorcycle, auto, horse, boat, guns and other sports equipment; special vacation expenditure as for travel, the purchase of the summer cottage; unusual gifts or contributions to church or philanthropic undertakings.

A general reserve fund, or saving for undesignated emergencies, is universally desirable. We have hit this need precisely by the old saw, "Save for a rainy day," and a modern philosopher has added, "Save, also, for the sunny opportunity." As a matter of fact everyone needs a reserve fund which is not pledged to any single need but is ready for any draft made upon it. Business men have come to recognize the absolute necessity of a reserve fund kept outside their regular business funds, usually invested in bonds, which can be used at once as collateral or cashed for funds in an emergency. The individual and the family need a similar reserve fund for it will contribute a sense of security and also the power to turn about in business affairs or in personal matters whenever the need may arise. The undesignated surplus or reserve should be the first great goal in saving. Its importance is not yet recognized by most people, but a moment's reflection shows the part it can play in living on a rational basis.

Savings and Insurance.—Some of the goals for individual or family saving are emergencies which can also be provided against by the joint method of insurance, for example, meeting the expenses due to sickness, or death. Sickness insurance is available, at rather high prices, it is true, for the person of small means; "burial insur-

ance" or industrial insurance at 5 cents or 10 cents or more a week per person is now carried for children and adults alike by large numbers of families in narrow circumstances, and unwisely so, many critics believe. Insurance, when available, is usually considered to be a more economical provision than that of saving,—but each case merits separate examination; it may be cheaper, for example, for the wage-earner to carry burial insurance on himself alone, and to substitute for insurance on other members of his family a general reserve fund in which he makes deposits weekly. Individual saving and individual insurance are supplementary protective measures, both of which must be applied by the individual family to secure adequate financial protection and progress.

Social Insurance.—Compulsory social insurance to be provided at the joint cost of employer, employe and the state will, we are sometimes told, make individual saving unnecessary. A comparison of the social insurance program, namely, protection against the "four fears," of accident, sickness, unemployment and old age, with the partial list of goals for saving given above, disproves such an assertion. The progressive character of human wants, which will develop new future needs as fast as old ones are provided for, gives further fundamental testimony that individual saving will always be necessary.

A PROGRAM OF SAVINGS

A thrift program of savings should be drawn up by each individual and family, preferable as a written memorandum, in which after honestly facing the above and other needs, a decision is reached as to amounts which should reasonably be saved for such and such

purposes to be available at such and such times. This should be estimated as a certain requirement per week or month which should thereupon be made the first charge upon income whenever the pay envelope or salary check is received. By establishing the habit of saving regularly and of setting aside the savings in a bank account or elsewhere before one begins spending, one can become a successful saver. "How much can I save?"

An answer for incomes of various amounts and families of various sizes is suggested by the savings allowances which appear as the first item in the standard budgets given in the appendix. Saving is a habit easily made automatic. The fact that life insurance premiums are met with comparative ease by most people because they are a regular recurring charge points the way to success in saving. In family economy thrift in saving as in spending can often wisely be made a family problem in which all members of the family participate in making the necessary plans and helping in their execution.

THRIFT AND INVESTMENT

The successful investment of savings requires continued attention as well as does the accumulation of savings. A few points regarding thrift and investment may be suggested here:

Use local investment institutions and opportunities; make your banker your adviser; patronize your local building and loan association, and your local savings bank; local real estate where you know conditions is a safer investment than distant property. If you do invest elsewhere use only established institutions such as investment houses which your local banker will recommend.

Plan a progressive investment program. Start savings in government savings stamps or in your local savings bank. When you have \$50 to invest, put it in a government bond. When you have \$500 to place, government bonds may still be your best choice, or some other safe bond that pays slightly more. Stop paying rent and begin buying a home, through partial payments to a building association, if necessary, thus capitalizing rent payments gradually into house ownership.

If you invest in securities, buy only safe investments such as high class bonds. The average man should not invest in stocks. Be content with a lower income from an established safe undertaking rather than chance your savings in untried enterprises. Government bonds will be the backlog to personal investment for the present generation. Hold all your own and buy more. Do not sell securities because of an emergency need for money; rather borrow on them as collateral and then save and reclaim your securities.

Do not invest in a friend's business. Friends should find accommodations through banks and other established channels; you should put out your money through similar channels. Do not involve your life insurance in business or other investments by borrowing upon it. By curbing your desire to speculate and investing only in safe enterprises you can certainly accumulate a competence. If you are not willing to take this safe path, adopt the safety first principle of keeping 75 per cent of your personal capital in safe investments and restrict speculative investment to the remaining 25 per cent of your accumulation.

Watch interest returns carefully. Do not lose possible interest, for exam-

ple, by withdrawals from a savings account before the interest date or by delaying deposits beyond that date. Rédeposit interest as soon as received so as to compound it. Determine the actual yield upon the proposed investment and change investments when you can legitimately take advantage of an increased yield, but remember that a guaranteed average rate as on bonds is better than a possibly higher rate of interest as on stocks.

Take care of your securities. A safe deposit box is cheaper than possible loss. A written record of securities reviewed occasionally is a stimulus to increasing your investment. Follow expert advice but do not follow tips. Learn to discount fraudulent financial advertising.

THRIFT AND CONSERVATION

Things bought with money are a storehouse of services which they can render to their owner. Skill in earning, saving, investing and spending, does not completely guarantee economic well-being unless there is added to it intelligent and thrifty use of property owned. Thrift in the use of things excludes personal waste in consumption. War required the conservation of food and all objects of personal use, and such standards widely adopted and made permanent are an additional basis for individual welfare, since everyone wastes enough to provide some other thing desired but not yet secured.

Thrift demands the application to personal property of business standards for repairs and replacements necessary to maintain efficient service. For example, a car well kept up not only renders better service, dollar for

dollar, to its owner but maintains its investment value. Thrift requires the covering of possible loss by insurance as fire, burglar, and other types. Thrift in conservation emphasizes the importance of good quality in merchandise or other material things acquired. The cost per unit of service secured decreases as length of service increases.

APPENDIX

Suggested Standard Budgets for Families and Individuals

The following standard budgets were recently prepared under the general direction of the present writer for the Savings Division of the United States Treasury Department. The chief credit for them is due to Mrs. Alice P. Norton, editor of the *Journal of Home Economics*, who was ably assisted by Miss S. Maria Elliott of Simmons College. Acknowledgment should also be given for the advice and suggestions of many of the foremost home economists in the United States.

SUGGESTED FAMILY BUDGETS \$1,200 TO \$5,000 A YEAR \$1,200 A YEAR—\$100 A MONTH

	Number in the family			
	Two	Three	Four	Five
Savings.....	\$10	\$7	\$5	\$3
Rent.....	16	16	16	16
Food.....	27	34	41	48
Clothing.....	13	14	15	15
Housekeeping expenses.....	10	9	8	7
Church, charities..	6	5	3	1
Health, recreation, education.....	10	8	6	5
Personal, miscellaneous.....	8	7	6	5
Total for month	\$100	\$100	\$100	\$100

\$1,800 A YEAR—\$150 A MONTH

	Number in the family			
	Two	Three	Four	Five
Savings.....	\$27	\$21	\$15	\$10
Rent.....	20	20	22	22
Food.....	37	44	51	58
Clothing.....	20	20	21	22
Housekeeping ex- penses.....	11	12	12	12
Church, charities..	10	9	8	7
Health, recreation, education.....	12	12	10	10
Personal, miscel- laneous.....	13	12	11	9
Total for month	\$150	\$150	\$150	\$150

\$2,400 A YEAR—\$200 A MONTH

	Number in the family			
	Two	Three	Four	Five
Savings.....	\$48	\$40	\$31	\$21
Taxes (Federal in- come).....	2	1	..	..
Rent.....	25	25	27	27
Food.....	40	48	56	64
Clothing.....	22	25	28	30
Housekeeping ex- penses.....	18	20	20	20
Church, charities..	15	12	11	11
Health, recreation, education.....	14	14	13	13
Personal, miscel- laneous.....	16	15	14	14
Total for month	\$200	\$200	\$200	\$200

\$3,000 A YEAR—\$250 A MONTH

	Number in the family			
	Two	Three	Four	Five
Savings.....	\$65	\$53	\$40	\$30
Taxes (Federal in- come).....	5	4	3	2
Rent.....	30	30	35	35
Food.....	40	48	56	64
Clothing.....	30	33	36	39
Housekeeping ex- penses.....	25	30	32	32
Church, charities..	19	17	16	16
Health, recreation, education.....	18	18	16	16
Personal, miscel- laneous.....	18	17	16	16
Total for month	\$250	\$250	\$250	\$250

\$5,000 A YEAR—\$416.66 A MONTH

	Number in the family			
	Two	Three	Four	Five
Savings.....	\$125.66	\$105.66	\$90.66	\$76.66
Taxes (Fed- eral income)	15.00	14.00	13.00	12.00
Rent.....	50.00	50.00	60.00	60.00
Food.....	45.00	55.00	65.00	75.00
Clothing.....	45.00	50.00	55.00	60.00
Housekeeping expense....	50.00	60.00	63.00	65.00
Church, char- ities.....	36.00	33.00	27.00	25.00
Health, recre- ation, edu- cation....	25.00	25.00	22.00	22.00
Personal, mis- cellaneous..	25.00	24.00	21.00	21.00
Total for month...	\$416.66	\$416.66	\$416.66	\$416.66

SUGGESTED INDIVIDUAL BUDGETS \$15 A WEEK TO \$1,800 A YEAR

\$15 A WEEK, OR \$65 A MONTH, OR \$780 A YEAR

	A week	A year
Savings.....	\$.25	\$13.00
Room and board.....	8.00	416.00
Lunches.....	1.50	78.00
Carfare to business.....	.60	31.20
Clothing.....	3.00	156.00
Laundry.....	.45	23.40
Church, charities, gifts...	.20	10.40
Health, recreation, educa- tion.....	.75	39.00
Miscellaneous.....	.25	13.00
Total.....	\$15.00	\$780.00

\$17.30 A WEEK, OR \$75 A MONTH, OR \$900 A YEAR

	A week	A year
Savings.....	\$1.00	\$52.00
Room and board.....	8.00	416.00
Lunches.....	1.50	78.00
Carfare to business.....	.60	31.20
Clothing.....	3.50	182.00
Laundry.....	.50	26.00
Church, charities, gifts...	.50	26.00
Health, recreation, educa- tion.....	1.00	52.00
Miscellaneous.....	.70	36.40
Total.....	\$17.30	\$899.60
Balance for extra Thrift Stamps.....	.....	.40
		\$900.00

\$23.08 A WEEK, OR \$100 A MONTH, OR \$1,200 A
YEAR

	A month	A year
Savings	\$12.00	\$144.00
Federal income tax	1.00	12.00
Room and board	40.00	480.00
Lunches	8.00	96.00
Carfare to business	2.60	31.20
Clothing	16.75	201.00
Laundry	3.25	39.00
Church, charities, gifts	4.40	52.80
Health, recreation, educa- tion	8.00	96.00
Miscellaneous	4.00	48.00
Total	\$100.00	\$1,200.00

\$34.60 A WEEK, OR \$150 A MONTH, OR \$1,800 A
YEAR

	A month	A year
Savings	\$30.00	\$360.00
Federal income tax	4.00	48.00
Room and board	45.00	540.00
Lunches	11.00	132.00
Carfare to business	2.60	31.20
Clothing	25.00	300.00
Laundry	4.00	48.00
Church, charities, gifts	10.00	120.00
Health, recreation, educa- tion	12.00	144.00
Miscellaneous	6.40	76.80
Total	\$150.00	\$1,800.00

The Insurance of Thrift

By JOHN A. LAPP

Managing Editor of *Modern Medicine*; Educational Director, National Catholic War Council

THERE is probably no one who doubts the value of saving both for its results in character and the material security which it brings to the individuals who have succeeded in accumulating property. The thrifty individual is more likely to be a good citizen than the unthrifty, and he is more likely to be able to take care of himself and his family in the ordinary course of life. On the other hand, it is equally clear that the narrow type of thrift advocated by some, does not always make good citizens, nor result with certainty in the safeguarding of the individual and his family particularly in the emergencies of life.

THE NATURE OF REAL THRIFT

Thrift which develops selfishness, and which sacrifices the physical and moral welfare of the individual will increase the hazards of life, especially those of sickness and dependent old age, and decrease the relative power to overcome them. A recent advertisement in one of our large cities flared forth the message to the working man that the first payment from the weekly wage should be made to the savings account. This statement plainly ignores fundamentals and gives an erroneous idea of what thrift really is. It is axiomatic that the worker and his family must be sustained in vigorous health as the first consideration. If wages are high enough to allow savings after the needs of the family are met, it is an act of thrift to put money into a

savings account, otherwise it is the negation of thrift. To encourage men to save at the expense of milk for the babies, or adequate nourishment for the worker and his family is to encourage destructive selfishness which should be condemned by those who put permanent social interests above present pseudo-thrift.

This observation will help to define thrift as used in this article. Mere accumulation of property is not thrift as here used. A savings account or the purchase of a home is not necessarily a sign of thrift as here understood. If a worker has borrowed from his fund of physical energy to put money in a savings account, it is a disastrous form of thrift; he has merely taken a part of his vital resource and turned it into property. If a worker saps his physical power for the sake of a money savings, he will soon exhaust his physical bank account.

Thrift is broader than mere saving. It is to the individual what conservation is to the nation. It does not consist in hoarding resources, but rather in their wise use. The weekly wage properly spent is thrift, even though not a penny may have been put into a savings account or the purchase of a home.

The thrifty person will spend his income to meet certain definite needs in about the following order:

First, he will provide for himself and his family the necessities of life and such comforts and luxuries as will sustain himself and

his family in the best physical condition, and will take advantage of opportunities which will increase his competence.

Second, he will look after the health and moral welfare of himself and his family, and expend such sums as will safeguard them against physical and moral decay.

Third, he will provide against the calamities of life, namely unemployment, accidents, sickness, old age and dependency of his family in the case of his death. Then, if there is anything left over, it may properly be used for what is generally denominated as thrift, and for such additional pleasures as he may choose.

Absolutely nothing can be spared from the first necessity as stated above. To sustain the working power of the individual and the physical welfare of his family are paramount to every other consideration. Scarcely of less importance, although materially not so pressing, is the safeguarding of the morals of the worker and his family. It may be said that thrift is specially designed to meet the third requirement, namely protection against the hazards of life. It will be the purpose of this paper to show that thrift by itself cannot provide for the rank and file of men against these hazards.

THRIFT AND THE HAZARDS OF LIFE

The advocates of individual saving as a means of providing against the hazards of life seem to go on the theory that these hazards confront every one in like degree. They ignore the unequal distribution of the burden which the contingencies of unemployment, sickness, accident, old age and death throw upon certain people.

They seem to conceive of life from the standpoint of those few individuals who escape the serious disasters which these contingencies of life bring.

If we could assume that all human beings were born with equal physical and mental stamina; that they were given an adequate preparation for life; that they never had to go without work for a great length of time; that they never had sickness of more than a few days duration; that they could hold their positions as long as they lived; that they will not live for an extended time beyond the point when they are compelled by advancing years to quit work; and that they will not die at a time when small children call for protection, we could rely upon individual thrift to provide for our wants throughout life. But life is not lived that way by the majority of people. Some are born with physical or mental weaknesses; some are handicapped by accidents or diseases in early life; some have sickness either of the worker or members of the family lasting months or years; in periods of depression some may be out of employment for months; large numbers live many years beyond the time when they can earn their living; while thousands die in the prime of life, leaving helpless dependents. Still others, from one calamity or another, such as fire, business failures, bank failures, and stock swindlers, lose the accumulation which they may have saved to meet life's contingencies. Mere saving by itself cannot provide safeguards against the overwhelming character of one of these many disasters that may come to the thrifty and thriftless alike. Individual thrift, as usually understood, cannot

provide for these calamities because none of these calamities can be measured in the life of an individual.

No one can tell the extent to which one of these calamities may affect him. One cannot tell whether he is to be sick six days or six months during the coming year, or how many months unemployment may be forced upon him by business depression, or know the length of his years beyond working life. These are uncertainties which can be measured for a large group of people but which cannot even be approximated for a single individual.

A man may, by saving, accumulate \$10,000 and see it all swept away by a single prolonged illness. A thrifty couple may provide themselves with a home, but at sixty-five they cannot be assured that it will protect them for the three or the thirty years which they may yet live.

CAUSES FOR ECONOMIC DEPENDENCE

Sickness.—Let us examine some of the hazards of life in greater detail. Sickness is the most calamitous of the hazards of life. A large part of our troubles find their roots in sickness. More people are doomed to economic dependence and destitution by sickness than by any other cause, or in fact by all other causes combined. Sickness picks its victims at random, sparing neither rich nor poor, thrifty nor thriftless. Yet the total amount of sickness is easily measured.

We know from innumerable statistical data that the average sickness for all working people will be about nine days every year. Now, if the total sickness were distributed evenly, nine days to each person, ordinary

thrift could take care of the problem. If each man expects to lose nine days by sickness each year, he could lay aside a sum equal to nine times his daily wage and an equal amount to pay for medical care and he would thereby have a fund equal to the amount which he loses on account of sickness. It is absurd, however, to talk in terms of average amounts of sickness, and draw conclusions therefrom. Sickness does not distribute itself nine days to each person. Many escape entirely; a large part of those who are sick are disabled from working for only a few days. Some are sick for weeks, others for months, while a considerable number are disabled for years.

Instead of being distributed nine days to each person, the distribution in an ordinary year will be as follows: 80 per cent of the workers escape serious sickness; 20 per cent suffer the entire loss in a given year. Of the 20 per cent who are sick, 65 per cent are sick for less than four weeks; 20 per cent are sick from four weeks to eight weeks; 7 per cent are sick from eight to twelve weeks; 6 per cent from twelve to twenty-seven weeks, 3 per cent for more than six months, and 1.3 per cent for more than a year. Applying these figures to the United States we find that of the thirty-eight million people engaged in gainful employment, the chief burdens of sickness for a year, excluding the insane, defective, and institutional classes, are borne by 7,600,000 workers. Of these, 4,940,000 are sick for less than four weeks; 1,520,000 are sick from four to eight weeks; 532,000 are sick from eight to twelve weeks; 456,000 are sick from twelve to twenty-six weeks; 228,000 are sick for more than six months, while 98,800 are

sick for more than a year. The existing figures do not show us the number who are sick for more than two years or who are permanently disabled.

The distribution of medical cost tells exactly the same story. The bulk of families escape, while the burden falls disastrously upon those who happen to be sick for the longest periods and, of course, it falls at the time when the victim is least able to bear it. The conclusion from these figures is obvious. Ordinary individual thrift may provide against sickness for those who are disabled for short periods. It cannot provide against the calamity of a three, six, nine, or twelve months' sickness, which the figures indicate is suffered by more than three-quarters of a million working people every year.

Unemployment.—The same story may be repeated with regard to unemployment, particularly in the great centers of population. Men cannot know whether the wheel of fortune is going to bring them continuous employment or whether they will be compelled to wait for weeks or months for the chance to earn a living. Periods of depression such as those of the winter of 1908 and the years of 1914 and 1915 compel thousands in industrial centers to use up the little savings which they may have or to depend upon friends or upon charity.

The calamity of unemployment is not so wide-spread, nor so severe as that of sickness. It affects primarily the wage earners in the larger centers. Rural communities and small towns escape acute manifestations. The small owner or operator is not immediately affected. Moreover the loss is merely of wages, whereas in sickness, the loss is doubled through the cost

of medical care. A savings account will help in this as in any other emergency but it should not be relied upon to meet the uncertainty.

Accidents.—The calamity of accidents falls also at random on the workers but the need for the distribution of the burdens, and the need for the distribution of the employer's liability have been so obvious that 42 states have already passed workmen's compensation laws for industrial accidents, under which the economic burden is taken from the backs of the injured workers and distributed over all of the people. Thrift failed to meet the calamity of accident because the individual risk was not measurable. Insurance was applied to measure the risk for the group and ease the burden for the unlucky individual who was injured.

Old Age.—When we come to the discussion of individual thrift as a provision for old age, we consider a hazard far more indeterminable for the individual than sickness, unemployment, or accident. The hazard of old age really involves all of the other hazards. If a man escapes serious illness and accident throughout life, both of himself and his family, and escapes long periods of unemployment, and has been thrifty and likewise possessed of business ability enough to safe-guard his thrift, he may have enough to meet the hazard of old age whether he lives one or thirty years beyond the time that failing physical powers compel him to quit work. Few, however, do escape one or another of the calamities of life, and the great majority approach old age with the necessity of relying upon their children or upon private or public charity to take care of them in their last years.

When a man has worked through life for meager wages, perhaps scarcely sufficient to maintain physical vigor, and from these meager wages has been compelled to meet individually the cost of sickness, accidents, and unemployment, he is not likely to be possessed of any considerable amount when he reaches the age of 65, even though he be possessed of unusual qualities of thrift. The hazards of life prevent the majority from remaining independent in old age. Figures gathered by the Ohio Health and Old Age Insurance Commission indicate that among 500 old people in private institutions for the aged, 40 per cent were there on account of previous sickness; 19.6 per cent on account of misfortune; 12 per cent on account of intemperance; 11.8 per cent on account of low wages; 10 per cent on account of improvidence, and 5.8 per cent unknown. Similar figures for 1,600 inmates of county infirmaries indicated that 36 per cent were there on account of sickness; 11 per cent on account of improvidence; 29 per cent on account of intemperance; 11 per cent on account of low wages, and the rest unclassified.

As indicative of the way in which people lose money, it was found that among 150 former property owners, 70 had lost their property by business failure; 61 by poor investment; 17 by bad loans; 2 by illness and 9 by improvidence. These figures are merely illustrative of the hazards which must be met before reaching old age.

If we could assume that many people escape all of these hazards, and have at 65 years of age a small competence, we then come to the real hazard of old age. Most of the people at 65 are no longer employed.

They must depend, therefore, upon their savings of former years. A few may have small business or farm interests which they continue to guide; a few skilled and professional workers remain in employment beyond this age; unskilled laborers and also many skilled laborers have practically no employment. Those who have a small competence as well as those who have not, are faced with the problem of providing for an uncertain length of years.

Half of the people 65 years of age will live to be 75. Of those who reach 75, half will live to be 81; and of those who reach 81, half will live to be 85. In a group of 10,000 people at 65 years of age, 5,000 will live to be 75; 2,500 will live to be 81, and 1,250 will live to be 85. It will be observed that a large number of aged people live more than twenty years beyond 65. A goodly number live beyond 90 and 95. The small savings at 65 must be spread over a possible span of one to thirty years to take care of the aged person. If the savings are large enough so that the income will provide annually for expenses, he is secure for the rest of his life unless of course the rising costs of living reduce the value of his income. In such case, he does not dare use any part of his principal because the principal is his safe-guard against dependency if he happens to live for many years. If he uses his principal he may later become dependent. If he depends upon the income, even if it is sufficient for the time being, his life is one of uncertain, if not precarious, independence. The logical way for him to manage his affairs is to combine with his fellows through the medium of insurance to buy himself an annuity for as long as he may

live. The individual cannot measure the hazards of old age for himself, but the group can measure the hazards for the whole because it can be figured exactly how much money is needed to pay a certain sum to the survivors in the group.

INDIVIDUAL THRIFT SUPPORTED BY INSURANCE

We are faced then in the determination of thrift with several other important considerations:

(1) The question of thrift is bound up with the question of wages. There can be no real thrift without adequate wages. (2) The saving of money should not be encouraged to the detriment of physical and moral stamina. (3) The calamities of life for the great majority cannot be provided against with certainty by individual thrift. (4) The hazards of sickness, accidents, unemployment, and dependent old age, while not measurable for individuals are measurable for groups. (5) Individuals, by combining together through insurance are able to distribute the extra burdens of life in such a way as to prevent individual calamity and thus enable one to provide by normal savings against abnormal contingencies.

Individual thrift is building houses upon sand unless supported upon the foundation of insurance. Individual thrift will help in normal contingencies, but will be of slight assistance, except in rare instances, in those serious calamities which should receive most careful consideration. The application of the insurance prin-

ciple in the safeguarding of thrift is the obvious solution of the problem. But this cannot be done by relying upon private initiative and enterprise. All experience shows that the bulk of the people are not forehanded enough to see the necessity for insurance. The great majority are fatalists in such matters as sickness, accident and dependent old age. Moreover private insurance increases the cost abnormally because of the expense of securing and maintaining business. From 50 per cent to 60 per cent of the premiums from casualty insurance go to the private owners for management and profit, and even greater per cents of premiums in burial insurance go for the same purpose. Purchasers of old age annuities pay large toll to private insurance companies. It is entirely wrong to attempt to safeguard thrift by compelling thrift to pay tribute to private profit. It is plain logic to suggest that thrift be safe-guarded by means of public, mutual, social insurance. It is the practical business-like way. Such insurance is collective public thrift. Business provides a depreciation fund for plant and machinery. Society should form a depreciation fund for human values. The fact that scarcely any of the hazards of old age and unemployment, and not two per cent of the hazards of sickness are provided against by insurance at present, indicate that existing insurance agencies are not solving the problem. The example of almost universal accident insurance for workmen in industries points to the proper solution of the problem.

The Nation's Call for Thrift

By FRANK L. McVEY

President of the University of Kentucky, Lexington, Kentucky

IN the older days of railroading a sign stood guard at every crossing on which were the words, "Stop, Look, Listen." Evidently this positive command has been forgotten in railroad circles, and elsewhere for that matter, for the traveller is now informed that it is a railroad crossing which he is approaching, the "Stop, Look, Listen" being taken for granted as part of the functioning of a reasoning human being. Pretty much the same attitude appears to be the rule in other departments of activity. Everywhere are advertisements setting forth the attractiveness of goods and nicknacks as the desirable things to exchange for money. So the world goes on piling up consumption goods and the people buy without thought of the future. It is in reality high time to put up the sign "Stop, Look, Listen" over every door in the land.

Perhaps such a statement needs explanation. It may even appear dogmatic—it probably is—but the purpose of an opening paragraph is acknowledged if attention has been attracted to the real import of the statement. In the face of the demand for higher wages, more rents, larger prices and all the rest of the phenomena now familiar to the student, every citizen is demanding more in order that he may meet the cost of every day living. This in itself is the natural way out of personal difficulties, but when multiplied by thousands of instances, the mass of people are no nearer the end of their troubles than before. In fact, new demands

leave the problem just as unsolvable as before.

PRODUCTION THE BASIS OF PROSPERITY

It hardly seems necessary in the Year of Grace 1919, to set forth the simple principle that production of goods for human needs is the only way in which human wants, and as a consequence, higher wages and better living, can be met. Yet all the evidence points to the conclusion that the principle has been forgotten. More wages in money will help one person, why not the same for all?

When Robinson Crusoe sat in his cave inventorying his possessions, he came upon a bag of gold in a great sea chest. Looking at the gold sovereigns so worth the while in civilized England, he gave utterance to the remark, so Defoe tells us, "Sorry, worthless stuff." And it was to him. He couldn't buy anything with it; he couldn't use it in any way that he thought worth while; there were no human beings who were willing to exchange it for goods, because other people would take it from him for their goods. So it laid in the chest forgotten for years. Our civilized societies are in the reverse conditions. Men have money, but the goods are not there in the quantity necessary for the needs of the world. Strikes are not likely to produce more goods, and extravagance in their consumption will not bring them into existence. Where then are we?

The agencies of production are labor, capital, land and management. No prolonged endeavor can go on for any

great length of time without all of these agencies. Labor must have food, but food requires labor, land and capital for its production. Only in the last 100 years has the world accumulated any great quantity of capital, and no inconsiderable amount of that has been wiped out by the Great War. The disasters of nature dog the steps of man, and place heavy burdens upon him. The pests destroy his crops, and winds drive his fleets on rocky shores. Against all of these, he struggles bravely and hopefully. The War, however, has swept some countries bare; billions of capital have been destroyed, and millions of lives were given over to the god of war. The impress of all of this has not yet been made upon the world. We must come to thrift, economy and hard work to restore the world to the place where it was in the year 1914.

THE CONSUMPTION OF WEALTH

Growing Demand for Consumption Goods

With some danger of repeating what has already been said, it is worth while to rub the lesson in. We must grasp the idea that man is not free to go on indefinitely consuming; he soon encounters powerful influences, which work against the increasing of product without increased labor, effort, more capital, and better organization. "The more food and clothing, fuel, and other material goods we require, the further we have to go for the material, and the harder it is to get; we must plow inferior lands yielding smaller crops, we must sink deeper shafts for our coal and iron. As our population grows ever larger, and this larger number wants more and more pieces of the earth to feed its machines and turn out the increased quantity of goods, the drain upon the natural resources is

constantly increasing. The material world is limited; in time, nature will become exhausted, and long before this happens, the quantity of human labor required to raise the increased supply of raw material in the teeth of the Law of Diminishing Returns will far exceed the economies attending large-scale production."

The population of the United States is now more than 100,000,000. From the point of view of consumption and the supplying of wants, this means a great and growing demand for food-stuffs, higher land values, smaller exports of food products, and larger imports of materials for manufacturing. Progressing at this rate the growth of population in the United States will necessitate the taking up of the waste places and the introduction of an era of intensive cultivation with higher efficiency in production. Conservation of natural resources also must reach the stage of an economic necessity, and interest in that subject will no longer be deemed a fad as is often the case at present. But against this necessity of labor is the constant retarding forces of nature, and the foolish tendencies of men to fritter away their patrimony.

Consumption by Forces of Nature

From time to time a vast amount of wealth is destroyed by storm, fire, and flood. A tornado on the Great Lakes and the east coast of the Atlantic not long ago drove hundreds of vessels ashore, drowned many men and destroyed valuable cargoes. In 1913 a storm on the Japanese coast, accompanied by a volcanic eruption, killed thousands of people and destroyed the property of many more. The report of the engineering division of the War Department states that the annual loss from floods in the United States aver-

ages \$50,000,000, and in the Ohio flood in 1913, the loss to railroads, cities, and private individuals amounted to hundreds of millions.

Losses by fire add to the appalling aggregate of wealth destruction. In the year 1916 the fire losses in the United States amounted to \$168,905,100, and despite the efforts of the insurance companies and other agencies to limit the size and frequency of fires, the absolute amount of waste has declined but slightly. The newness of some parts of the country, the absence of regulations for building in many places and the failure to provide first-class protection against fires, gives the United States a per capita fire loss which is from five to six times as large as that of any of the leading European countries.

Irving Fisher, in estimating the cost of the annual charge against the country for illness, places the figure at \$1,000,000,000. Probably \$660,000,000 of this cost is attributable to tuberculosis alone. Dr. L. O. Howard, Chief of the Federal Bureau of Entomology, says that malaria alone costs the country \$100,000,000 annually, while Dr. George M. Kober of Georgetown University, thinks that \$350,000,000 is a conservative estimate of the annual loss from typhoid. Diseases of plants and animals cause losses of millions of dollars every year by destroying products or impairing their value.

Consumption by Acts of Man

It is essential that some comment be made upon the acts of men themselves which affect the consumption of wealth, as distinguished from the acts of nature. The European war furnishes the most forceful instance in all history of the destruction of wealth

through force. Among the direct costs of the war are to be enumerated loss of property, cost of the army, seizure of raw materials, and other direct losses to governments and cities. The indirect costs include losses of agricultural and industrial production, of interest on investments, of earnings from shipping and banking and of profits of insurance and mercantile houses amounting to billions of dollars.

An economic depression due to the destruction of capital and wealth invariably follows war and causes a scarcity of food that brings about more deaths than the actual fighting. The fact is that even in civilized lands the resources of many are so scanty that an increase in the price of bread falls heavily upon the population.

In direct contrast to the expenditures for war are the amounts which are spent by governments, individuals and private associations for social amelioration and betterment. These comprise two classes; compulsory and voluntary expenditures.

The first class includes the outlay for expenses incurred by the different divisions of the government for services, such as the salaries of civil servants, police, soldiers, and judges and those for the general conduct of government. Military and naval defense is included in this group. Postoffices, telegraph lines and railroads, when owned by the government, supposedly pay for themselves, since the users return the cost of service.

Voluntary expenditures include the outlay for countless social and philanthropic agencies, both public and private. At one of the meetings of the American Academy of Political and Social Science, according to the American Year Book, for 1913 (p. 46), the art of giving was discussed as an exact

science. The reader of the paper declared that in 1912, perhaps the most notable year, gifts totaling nearly \$267,000,000 were reported by the press, and that for the twelve years preceding, the annual total of notable gifts had exceeded \$100,000,000. This statement tells something of the extent to which consumption for social purposes may be carried voluntarily.

The latest estimates of the yearly consumption of liquors and tobacco in the United States reach the enormous figure of \$2,830,000,000. Of this sum \$1,200,000,000 is spent for tobacco and \$1,630,000,000 for malt and spirituous liquors. The total gives an almost incredible per capita figure of \$28.00. In the fiscal year 1916, there were withdrawn for consumption in the United States 136,000,000 gallons of distilled liquors and a little more than two billion gallons of fermented liquors. Our consumption of coffee, tea and sugar has come to surpass that of any other nation, and they have been made a part of every family's diet. By unthinking individual consumption the magnitude of the social burden is materially increased. When a goodly portion of the individuals' consumption is governed by habit, the charge becomes practically fixed.

The nation's drink bill is often compared with the cost of government, but the nation's tobacco expenditures, while not so large as the liquor cost, were four times the amount spent on the Army and Navy before the war, and then, too, through the carelessness of smokers, thousands of dollars worth of property is destroyed each year. The amount spent annually for tobacco is three times the cost of the Panama Canal.

FACTORS AFFECTING INDIVIDUAL EXPENDITURE

Social Custom—The standard of dress affects taste and cost. What is termed fashion has come to set standards of living in food, clothes, and housing. Conformity to these standards is looked upon as a test of social standing, and thus the modern society is bound in many ways by the restrictions and limitations it places upon itself, which in turn affect individual expenditure.

For several years the public prints have been filled with comments upon the rising cost of living. The cartoonists have exercised their skill in depicting in humorous fashion, the ideas in vogue about living and its costs. The higher cost of living as compared with earlier days is due to a rising standard in the common life of the people, seen in better housing, more attractive clothing, higher qualities of food, and in the larger variety of amusements demanded by every class of the population.

Pressure of Population on Food Supply—In addition to the rise in the standard of living, there is another and more immediate cause for the increase in the cost of living, which is to be found in the pressure of the population upon food supply. Agricultural products have not grown in quantity commensurately with the needs of the population. The number of cattle has decreased not only in proportion to the population, but absolutely; in the past five years the increase in tilled acreage was 9 per cent and the increase in population 14.5 per cent. The United States, once a great wheat exporting country, now uses in normal times practically all of its grain for home consumption. These facts point to a rising demand without a corresponding

growth in product. The result is, as a matter of course, higher prices.

Change in Value of Money—Besides the influence of under-production upon supply, there is another, that of the money standard, which during the past twenty years has been changing in value under the influence of increasing supplies of gold and securities. In like manner an enlarged credit, due to the material growth of the basis of credit, gold, has had its influence upon the purchasing power of the dollar, with the result that the dollar is not now able to command in return as great an amount of commodities as formerly.

THE NEED FOR INCREASE IN CAPITAL

Read in the light of the present, this is an overwhelming category of consumption in a civilized society. It is bad enough in normal times. To it has been added individual prodigality, the refusal of labor to work as of old, and the very discouraging burden of war expenditures. In a recent speech before the House of Commons Lloyd George said: "The aggregate direct cost of the War was \$200,000,000,000. If 40,000,000 able-bodied young men were to take holiday and be withdrawn from the task of production for four years, and if during that period £1000 were placed at the disposal of each, you would have some sort of notion what a

war on this gigantic scale means." Dr. Rowe, formerly assistant Secretary of Treasury, said: "It is evident to every student of the world situation, that the sum total of productive goods, raw materials, tools, implements, machinery, etc., is today insufficient to meet the pressing needs of mankind. The amount of available capital at any one time is limited, and at no period in the life of this generation has it been limited as at the present moment." "The fate of Europe is balanced on a knife edge," wrote Mr. Frank Vanderlip recently. There is only one way out, and that is saving, and with the capital so created, produce, produce, produce.

The world is poorer, much poorer than it was in 1880. The generation now coming on, faces a less pleasing prospect than the one that is passing. What is more disturbing is the lack of habits in the new generation for hard work, and thrift. Faced with the most serious problems, the hope of the world is to be found in a productive people, who know how to produce, who appreciate the great power of thrift, and who are willing to forego the pleasure of the present because they know that capital is the result of saving, and that labor without capital is a blind man groping in the dark. The times call for all of us to "Stop, Look, Listen," and having done that, to work and save.

Wealth, Income and Savings

By DAVID FRIDAY

University of Michigan, Ann Arbor, Michigan

THE MEASURE OF NATIONAL THRIFT

THE thrift of a nation is measured by the excess of its production over its consumption. This excess constitutes the nation's savings. In arriving at any statistical measurement of the ability of the nation to save, the starting point must, therefore, be the nation's product. This is commonly called the national income. It consists of all commodities and services brought forth within the country during the period chosen as the statistical time unit. The excess of this product over the customary minimum of living measures the ability to save. What we need, then, in arriving at a statistical estimate of the saving power of a nation is first of all as exact a notion as possible concerning the size of the national income; and second a comparison of our present national income with that of the past.

NATIONAL WEALTH

Unfortunately, at least from our point of view, much greater attention has been given to statistics of wealth than to those of income. The figures of national wealth are by no means as important for the purpose in hand as are the figures of national income. They are of some importance, however, as bearing upon the nation's productive capacity. The wealth of the nation consists largely of its technological equipment—of the things, that is, which assist the people in bringing forth the national income. Other things being equal, the larger this equipment the greater will be the

income out of which new capital can be accumulated.

NATIONAL INCOME

The best evidence as to the amount of the national income which can be saved without impinging upon our standard of living is to be found by comparing the amount saved in the past with the national income of the past, and thus arriving at the normal consumption of the people. If there were an actual inventory of all the goods and services produced within the year and we had definite facts showing the disposition of these products through consumption or addition to our industrial equipment, then it would be possible to state the excess of production over consumption and the use of the amount saved. Or if we had an inventory of all goods in existence within the nation at the end of each year which we could compare with a similar inventory at the beginning of the same period, we could calculate the excess of production over consumption from the increase in physical wealth.

To the increase as shown by such inventories it would be necessary to add the amount of goods loaned to foreign nations and those used in paying off our foreign indebtedness. We should then have to deduct the goods in the inventory which represented loans to us by foreign nations or repayments by them of debts which they had formerly owed in this country. Such statistics manifestly could not be obtained except by taking a census on

practically the same scale as the national decennial census. Since there are no statistics compiled for this express purpose, it is necessary to utilize data which have been gathered for other purposes by various public and private agencies, and to interpret them in such manner as to throw light upon the problem here under investigation.

We have an index of the savings of the past in the statistics of wealth at various times. The best evidence of thrift is to be found in the capital actually accumulated. By comparing produced wealth in existence within a country at various dates we can arrive with a fair degree of accuracy at the savings of the people during the period which intervenes between the

two summations of wealth. If we can arrive at the growth of wealth which was effected through savings in the pre-war period and at the national income then and now we will be in position to judge of the possible accumulation of capital at the present time.

INCREASE IN VALUE OF NATIONAL WEALTH

The fountain head of practically all information on the subject of our national wealth is the Census Bureau at Washington. In its volume entitled "Wealth, Debt, and Taxation" (1913) it shows the comparative wealth for 1912, 1904, and 1900. Table I is compiled from the data which that volume contains.

TABLE I
Estimates of Capital Wealth in the United States, 1912, 1904 and 1900

Item	1912	1904	1900	Increase 1904-1912
Real estate.....	\$110,676,333,071	\$62,341,472,627	\$52,537,628,930	\$48,334,860,444
Live stock, farm imple- ments.....	7,606,613,533	4,918,781,599	4,056,249,246	2,687,831,934
Manufacturing tools, ma- chinery, etc.....	6,091,451,274	3,297,754,180	2,541,046,639	2,793,697,094
Gold and silver coin and bullion.....	2,616,642,732	1,998,603,303	1,677,379,825	618,039,429
Railroads and their equip- ment.....	16,148,532,502	11,244,752,000	9,035,732,000	4,903,780,502
Street railways and other public utilities.....	10,265,207,321	4,840,546,909	3,495,228,299	5,424,660,412
All other, <i>not including</i> per- sonal clothing, furniture, etc.....	21,576,065,840	10,212,281,792	8,293,242,540	11,363,784,048
Total.....	\$174,980,846,273	\$98,854,192,410	\$81,636,507,481	\$76,126,653,863
Total other than real estate	\$64,304,513,202	\$36,512,719,783	\$29,108,878,551	\$27,791,792,419

From this table it appears that the wealth of this country, other than real estate and personal belongings used for current consumption, increased by \$28,000,000,000 during the period 1904 to 1912, or an average of \$3,-

500,000,000 per annum. Real estate increased \$48,000,000,000, or about \$6,000,000,000 per annum. The total increase was, therefore, at the average rate of \$9,500,000,000 per annum. But by no means all of this was the

result of capital accumulation. Much of this increase in the value of our national wealth was the result of price changes of things in existence at both dates.

Factors Affecting Increase in Total Value

Increase in Land Values.—Real estate consists of land and improvements. Only the improvements, such as new buildings, draining, clearing, fence and road building, and the planting and cultivation of orchards, are the result of production and savings. It is necessary, therefore, to eliminate from the \$6,000,000,000 per annum increase in real estate, that portion which represents merely increase in value of land as distinguished from improvements.

Change in Price Level.—In the valuation of the improvements, also, the change in the price level manifests itself in a higher valuation in the latter years. A correction must be made for this element. The same is true of many of the items other than real estate, especially those which were valued by a process of applying prices to inventories rather than by taking their cost of construction.

Causes for Increase in Land Value

Improvements.—The whole increase in the value of land, considered as an economic category, must be eliminated. Unfortunately we have no index number of land values in the United States. The most practicable method of procedure is, therefore, to estimate as best we can the percentage of the total value of real estate which consists of land as distinguished from improvements at each date. An examination of the real estate assessments of twenty-four states which separate improve-

ments from land values shows that approximately 40 per cent of the total real estate values are to be credited to improvements. The communities which make up this group are of a widely diverse nature, including as they do Arizona and Idaho on the one hand and Greater New York on the other. They may, therefore, safely be taken as representative of the general situation in the United States. The dates of the valuations are all much nearer to the year 1912 than to 1904, however; in fact, the mean date of all the assessments would be 1912. It is quite possible that the ratio in 1904 may have been somewhat different. But it seems unlikely that this difference was very great.

Growth of Population.—The general profitableness of the farming industry and the growth of population in our industrial centers have no doubt led to a very rapid rate of increase in the value of real estate during this period. But it is equally true that there has never been in all our national history such a rapid investment in buildings of all kinds as during the decade 1904-1914. Indeed the absorption of capital by building operations was one of the chief sources of the increased demand for capital and the rise in interest rates which has characterized this period.

Increase in Capital Accumulations

We cannot be seriously in error, then, if we take the value of improvements in 1904 at 40 per cent of total real estate values. This gives an average annual increase in the value of real estate improvements of \$2,400,000,000 during the period 1904-1912. This added to the \$3,500,000,000 increase per annum in other wealth gives \$5,900,000,000 as the total increase in

wealth other than personal clothing, furniture, etc., during this period. A portion of this increase, however, is due to a rise in the price level and not to additional production and savings. Some of the items like street railways and other public utilities, which are included on the basis of their cost, and like gold and silver bullion, call for no adjustment.

According to the Bureau of Labor wholesale price index number, the price level rose 17 per cent for all commodities between 1904 and 1912. The prices of metals and lumber rose 18 per cent. Taking all the items of capital wealth together, a 10 per cent allowance for increases in values must probably be made in the 1912 valuation. If the latter be adjusted for this price change, we find that the average addition to the wealth of the nation through capital accumulation and investment was approximately \$5,000,000,000 per annum, exclusive of clothing, furniture, etc. But the accumulation of capital in the latter part of this period and in the years just before the outbreak of the European war was undoubtedly more rapid, and reached a figure somewhat over \$6,000,000,000.

This amount is less than the figure of \$7,500,000,000 arrived at by George E. Roberts of the National City Bank of New York.¹ Mr. Roberts uses practically the same method as the one employed here. He, however, makes no deduction for the increase in the price level from 1904 to 1912. It is also slightly lower than Sir George Paish's estimate published in the *London Statist*, May 24, 1913. He places the annual growth of wealth in the United States at \$1,400,000,000.

¹ *Annals of the American Academy*, November, 1916, p. 287.

Amount of National Income

What was the size of the national income out of which this capital was accumulated? The best estimate of income during the pre-war period is that of Professor W. I. King in his book entitled *The Wealth and Income of the People of the United States*. He places the total income in 1910 at \$30,500,000,000. This figure may be brought forward to 1913 by taking the growth in railway gross revenues as the best available index of the increase in national product. These revenues in 1913 were 114 per cent of those of 1910. A proportionate increase would make the total income in 1914 \$34,700,000,000. If the national savings be taken at \$6,500,000,000 they constitute approximately 19 per cent of the national income. The consumption of the people for the year 1913, was, on the basis of these figures, slightly in excess of \$28,000,000,000.

After we had recovered from the depression into which industry and finance were thrown by the outbreak of the European war, our national income grew rapidly. During the latter part of 1915 and throughout 1916 and 1917 there was a steady increase in the output of goods as measured in physical terms. This acceleration of productive activity probably reached its height sometime in the autumn of 1917. Thereafter the rigor of the winter of 1917 and 1918, with its coal shortage and the withdrawal of men from industry through the selective draft prevented a further increase in productive output. The extent of this increase in production has been variously estimated, but an increase of 20 per cent expresses the fact within narrow limits of error.

Increase in Money Value of National Income

This increase of output coupled with the increasing prices in which that output was measured increased the money value of our national income at an amazing rate. Thus the total personal and corporate income reported to the Commissioner of Internal Revenue in 1913 amounted to \$8,614,000,000,000. In 1916 it amounted to \$15,066,000,000, and in 1917 to \$24,382,000,000. It is true that in 1917 over 3,000,000 persons reported who had made no reports of personal income in the previous years, but even after these are eliminated the corporate and personal incomes remaining amount to \$17,700,000,000.

The following table (Table II), showing the number of income tax returns by persons with incomes of \$3,000 and over, shows the effect upon personal incomes:

TABLE II
Number of Personal Income Tax Returns for the United States, 1914 and 1917

Income class	1914	1917
3,000 to 5,000.....	\$149,279	\$560,763
5,000 to 10,000.....	127,448	270,666
10,000 to 25,000.....	58,603	112,502
25,000 to 50,000.....	14,676	30,391
50,000 to 100,000.....	5,161	12,439
100,000 to 150,000.....	1,189	3,302
150,000 to 300,000.....	769	2,347
300,000 to 500,000.....	216	559
500,000 and over.....	174	456
Total.....	357,515	993,425

NATIONAL INCOME FOR 1917

The value of farm products increased from \$9,849,512,511 in 1913 to \$19,443,849,381 in 1917. These figures furnish striking evidence of what happened to national income during this period. In another place² I have estimated that the national income for 1917 totaled \$65,515,000,000, divided as follows:

TABLE III
Total National Product for 1917, by Industries

Extractive, manufacturing, and public utilities:

Farmers and farm laborers, including the members of their

families..... \$14,500,000,000

Manufacturers and manufacturing laborers..... 25,800,000,000

Mine operators and miners..... 3,675,000,000

Steam railroads and their employes..... 3,040,000,000

Public utilities and their employes..... 2,750,000,000

Subtotal..... \$49,765,000,000

Mercantile and professional activities:

Wholesale merchandisers..... \$2,250,000,000

Retail dealers..... 2,000,000,000

Professional services..... 2,500,000,000

Services rendered by others, including government employes 9,000,000,000

Subtotal..... \$15,750,000,000

Total national income..... \$65,515,000,000

Since that estimate was made the Commissioner of Internal Revenue has published his *Statistics of Income* for 1917. The analysis of income from business (personal returns) on page 16 of that volume and of corporate returns

on page 19 convinces me that the estimate presented above is somewhat excessive for manufactures and manu-

² The Taxable Income of the United States, *Journal of Political Economy*, December, 1918, p. 954.

facturing laborers and for mine operators and miners; but that it is very much understated for wholesale and retail dealers. The total of \$65,515,000,000 is pretty well supported, however, by the *Statistics of Income*. The personal services rendered by people other than those engaged in extractive, manufacturing, transportation, public utility and trading industries still remain the doubtful element in the estimate. But this is also the element in the national income which is of least importance in capital formation. Capital consists of produced goods and not of services rendered.

This estimate, while made entirely independently of Professor King's computation of national income, nevertheless confirms it. This is shown in the estimate of B. M. Anderson, Jr., of the National Bank of Commerce of New York City, who places the national income for 1917 at \$68,000,000,000 in an article in the *New York Times Annalist*, January, 1918. Dr. Anderson arrives at this figure by taking as a point of departure King's estimate for 1910 and increasing it by a factor which expresses the increase in the quantity of physical product multiplied by the rise in the general price level as shown by Dun's index number.

INCREASE IN NATIONAL SAVINGS DURING 1917

This increase in national income presented the possibility of largely increased savings. Thus if the national income increased 20 per cent through higher productive activity, it amounted to \$41,400,000,000 in 1917 even when measured in terms of the price level of 1913. If the 28,000,000,000 units of consumption of 1913 increased by 10 per cent, then the nation's consumption, as measured in 1913 prices, would have been 30,800,-

000,000 units. The excess of production over consumption in 1917 as measured in the 1913 price level would then have been 10,600,000,000 units, an increase of over 60 per cent in capital accumulation measured in physical terms. Measured in terms of money, the increase would of course have been much greater.

The level of wholesale prices, as shown by the Bureau of Labor Statistics index, by Bradstreet's index, and by the unusually comprehensive index number of the Price Section of the War Industries Board, was 175 in 1917, as against 100 in the period immediately preceding the war. If our 10,600,000,000 units of savings be translated into 1917 dollars, our annual savings in that year stood at \$18,550,000,000. The increase in production made it possible to raise the percentage of savings from 19 per cent in 1913 to 28 per cent in 1917 in the face of an absolute increase in consumption. The volume of savings was maintained during 1918 and was probably somewhat increased through the constant pressure brought upon all classes to decrease consumption in the interest of war finance.

These figures show that, given an increase of 20 per cent in productive output, it was possible to increase savings enormously without any increase in felt abstinence. The figures of savings here presented for 1917 are so stupendous and the assumptions of fact employed in reaching them are so broad that they must be tested by more direct and dependable evidence before any reliance can be placed in them.

TOTAL VOLUME OF SAVINGS

All wealth produced and not consumed is disposed of in one of three ways. It has been paid to the govern-

ment in taxes, it has been reinvested in additional plant, working capital, or some form of physical property by the individual or business organization which saved it, or it has been brought to some investment market. In the latter case evidences of proprietorship or indebtedness in the form of securities of corporations or bonds of state and municipal governments or of the federal government are issued in return. An estimate of the growth in government taxes, reinvested surplus and new securities issued will give a reasonably accurate picture of the total volume of savings.

The Investment Market

Table IV sets forth the statistics which are available for the years 1913-1918 concerning securities marketed, together with gold and securities repurchased from abroad. The figures here given for industrial and railroad securities are those listed by the *Journal of Commerce*; there are no published figures for other securities. These are considerable in volume, as is shown by a comparison of the figures given by the *Journal of Commerce* with the actual increase in capital stock

and bonded and other indebtedness available in the reports of the Commissioner of Internal Revenue for the years 1909-1913.

During this period the *Journal of Commerce* reports the new securities issued as \$7,157,084,000, while the actual increase for all corporations reporting to the Bureau of Internal Revenue was \$17,501,954,000. Even allowing for the refundings in the *Journal of Commerce* figures and for discounts in the Internal Revenue figures, it is reasonable to put the volume of other corporate securities issued at a minimum of \$1,000,000,000 per annum for ordinary years. In 1916 the volume of corporate financing was far in excess of the ordinary year, and no doubt ran as high as \$1,500,000,000 in excess of the *Journal of Commerce* figures. In 1918 the needs of war finance absorbed nearly all the available funds, and the issue of securities was materially reduced. When we add these estimates of additional securities issued, to the subtotal, which includes only the published figures, we arrive at a grand total of \$3,053,000,000 for 1913; \$7,563,000,000 for 1916; and \$14,510,000,000 for 1918.

TABLE IV
Capital Increase Shown by Investments During 1913 and 1915-1918
(in Millions of Dollars)

Item	1913	1915	1916	1917	1918
Industrial and railroad securities*	\$1,645	\$1,435	\$2,186	\$1,529	\$1,345
Government securities					
Foreign	0	1,275	1,381	805	640
United States	0	0	0	5,833	11,760
State and municipal bonds†	408	493	496	445	265
Gold and securities repurchased from abroad	0	1,300	2,000	700	0
Subtotal	\$2,053	\$4,503	\$6,063	\$9,312	\$14,010
Other securities, less deductions for refunding and for discount	1,000	1,000	1,500	1,000	500
Total	\$3,053	\$5,503	\$7,563	\$10,312	\$14,510

* Reported in the *Journal of Commerce*.

† Reported in the *Bond Buyer*.

This table shows that a very substantial amount of savings came to the investment market in 1913; that this amount had trebled by 1917; and had more than quadrupled in 1918. But it does not express the total volume of capital accumulation in the United States in the respective years. In a normal pre-war year less than two-thirds of our capital accumulation came to the market.

Industrial and Agricultural Profits

Two of the principal sources of capital accumulation in America which do not appear on the investment market are industrial and agricultural profits. One of the reasons why the rate of interest fluctuates so little under the stimulus of the demand for capital in times of prosperity and high profits is that in such times the supply of capital accumulated out of these profits is unusually large. To a considerable degree the industries supply their needs for capital out of their own profits. The failure to realize this fact has led to an underestimation of the volume of capital accumulation in this country, and is in no small measure responsible for the derogation in which we have held ourselves in this matter of thrift. In addition to this lack of attention given to certain sources of accumulation, there has been a rather common failure to distinguish between accumulation and investment.

Capital Accumulations in Industry

In a country like France, for example, which is less industrialized than the United States, where the corporate form of organization is less common and where there are fewer opportunities within the country calling for

capital, a much larger part of the annual accumulation of capital comes to the investment market. Savings there are largely in the form of investment in securities, often of foreign securities. Savings of this character become evident and are easily measured in statistical terms. In France we have nothing which corresponds to the great mass of corporate savings which are accumulated in the United States. These do not usually come to the investment market, and, therefore, attract little attention, but they are none the less real, and must be taken into consideration in any comparison between the United States and other countries. The railroads and industrial concerns in the United States have grown very rapidly, and in recent years they have added largely to the capital accumulations of the country through their additions to surplus. Practically all of this surplus was reinvested in extensions to plant and working capital made necessary by the large expansion of industry during these years. Table V shows this increase in surplus during the years 1911-1918 for all corporations in the United States.

TABLE V
Corporate Income, Dividends, and Surplus,
1913-1918
(in Millions of Dollars)

Year	Net income	Dividends	Surplus before taxes
1911.....	\$3,213	\$2,225	\$988
1912.....	3,832	2,498	1,334
1913.....	4,340	2,871	1,469
1914.....	3,711	2,667	1,044
1915.....	5,184	2,766	2,418
1916.....	8,766	3,784	4,982
1917.....	10,730	4,651	6,079
1918.....	9,500*	4,100	5,400

* Estimated.

The method of arriving at these figures I have set forth in an earlier paper.³ It is not necessary to repeat the details here. One sample will suffice to show the striking nature of the statistics. An examination of the published reports of mining, manufacturing and mercantile corporations shows that their net earnings, after interest and taxes, amounted to \$900,000,000 in 1915, of which they retained \$497,000,000, or 55 per cent as surplus. Their earnings in 1916 had increased to \$1,883,000,000 of which they retained \$1,219,000,000, or 65 per cent, as surplus. In 1917 these 363 corporations earned \$2,316,000,000, and their surplus for the year, before deducting income and excess profits taxes amounted to \$1,585,000,000. The reports of only 224 of these corporations are available for the period since 1911.

Figures showing their earnings and surplus, which are set forth in Table VI, show that in the earlier years, 1911 to 1914, they retained only 33 per cent of a much smaller income.

³ War and Supply of Capital, *Proceedings American Economic Association*, 1918, p. 85.

TABLE VI
Statistics of Income, Dividends, and Surplus for
224 Corporations
(in Millions of Dollars)

Year	Net income	Dividends	Surplus	Percent surplus to net income
1911.....	\$431	\$287	\$144	\$33.3
1912.....	487	299	188	39.1
1913.....	507	328	179	35.3
1914.....	381	295	86	22.2
1915.....	664	327	337	50.9
1916.....	1,364	526	838	61.4
1917.....	1,750	600	1,150	65.7

Corporate Savings and Taxes

It must be evident, therefore, that no accurate comparison can be made of the volume of savings in the different years without including corporate surplus. In 1917 and 1918, a large part of corporate savings was paid as taxes to the government; the same is true of a portion of individual savings. It is, therefore, necessary to add war taxes paid or reserved in order to make a complete summary of the savings of these latter years. Table VII sets forth a more complete statement of savings for the various years than was given in the table of investments given above.

TABLE VII
Capital Increase Shown by Investments, Surplus and War Tax Reserves During 1913 and 1915-1918
(in Millions of Dollars)

Item	1913	1915	1916	1917	1918
Industrial and railroad securities.....	\$1,645	\$1,435	\$2,186	\$1,529	\$1,345
Other securities, less deductions for refunding and for discount.....	1,000	1,000	1,500	1,000	500
Government securities					
Foreign.....	....	1,275	1,381	805	640
United States.....	....	....	....	5,833	11,760
State and municipal bonds.....	408	493	496	445	265
Corporate surplus after taxes.....	1,469	2,418	4,982	4,500	2,000
Gold and securities repurchased from abroad.....	....	1,300	2,000	700	....
War taxes paid or reserved.....	....	....	....	3,000	5,000
Total.....	\$4,522	\$7,921	\$12,545	\$17,812	\$21,510

The figures in this table are a pretty accurate index of the capital accumulation from these sources during 1915 and 1916. But for 1917 and 1918 they overstate the matter for two reasons. After the United States entered the war, considerable portions of corporate surplus were invested in government securities. Since this table includes both of these items, there is some double counting. Then, too, we must take account of the fact that corporate savings are here expressed in terms of money, and in times of rising prices and increased inventories the surplus does not represent a commensurate excess of physical production over consumption.

Furthermore, there was a very considerable purchasing of securities with bank loans. These must be deducted from the evidences of capital investment above in arriving at the savings of the people. The total of such loans on December 31, 1918, together with the investments of the banks themselves in war obligations and war paper, amounted to \$4,300,000,000 for the members of the Federal Reserve System. These items for all banks in the United States were, therefore, not far from \$6,000,000,000. The three items may amount to as much as eight billion dollars in 1917 and 1918. If we deduct four billion dollars from the figures for each of these years, the remaining totals will be as follows:

TABLE VIII

1913.....	\$4,522,000,000
1915.....	7,921,000,000
1916.....	12,545,000,000
1917.....	13,812,000,000
1918.....	17,510,000,000

This table includes nothing for the reinvested savings of enterprises not under the corporate form of organiza-

tion. Most mining and manufacturing is carried on by corporations, but the great mass of mercantile and professional activity is still under the private or copartnership form of organization. The savings of these establishments are large and no doubt increase in somewhat the same ratio as do those of corporations.

Savings of Farmers

The other important omission from the table is the savings of farmers. These no doubt increased enormously in 1917 and 1918. In the former year only a small part of these were brought to the investment market by the farmers themselves. Agricultural savings were invested, as they normally are, in the extension and improvement of farm machinery and farm buildings and in the increase of live stock; or in the payment of indebtedness such as mortgages, bank loans and notes to manufacturers of farm machinery. The farmer's capital accumulation depends more largely upon his product than upon any other single factor. The expenditures of his family are rather constant, and increases in the value of his product constitute in large part a savings fund. The increased value of farm products in the United States during the war made it easy for the farmers to save without any additional abstinence. The Department of Agriculture gives the following figures for value of farm products, 1911-1918, based on prices at the farm. (See Table IX.)

Previous to the war farm savings as evidenced by the increase in agricultural wealth were at the rate of \$1,200,000,000 per annum. The best estimate I have been able to make is that these savings rose to over \$4,000,000,000 in 1917, while in 1918 they

TABLE IX

Value of Farm Products, 1911-1918
(in Millions of Dollars)

1911.....	\$8,819
1912.....	9,343
1913.....	9,849
1914.....	9,895
1915.....	10,775
1916.....	13,406
1917.....	19,331
1918.....	21,386

exceeded \$5,000,000,000. During this period farmers were paying off their mortgages and other indebtedness at a rapid rate. A large volume of these real estate mortgages had been held by life insurance companies which brought the funds to the general investment market when the farmer extinguished his indebtedness. A portion of the farmer's savings, therefore, came to the general investment market in 1915, 1916 and 1917. This movement of funds was in part responsible for the abundant volume of capital available in the investment centers for the repurchase of American securities from abroad and for the absorption of government issues. Insofar as the farmers' savings found their way to the investment market they have already been included in our estimate of savings. But the greater portion of these savings of 1915 to 1917 went into farm improvements, and must therefore be added to the figures of savings already given.

CAPITAL ACCUMULATIONS 1913 TO 1918

When agricultural savings reinvested in farms are taken into consideration, and when due allowance is made for the reinvested earnings of individuals and partnerships, the capital accumulation for the years 1913 to 1918 may be conservatively put as follows:

TABLE X

1913.....	\$6,500,000,000
1915.....	9,000,000,000
1916.....	14,500,000,000
1917.....	18,000,000,000
1918.....	22,000,000,000

The savings of 1918 were made out of a national income which in physical terms was barely maintained at the 1917 level. The price level was, however, higher. The Bureau of Labor Statistics index shows the relative prices of 1918 as 197 per cent as against 175 for 1917; this was an advance of 12.6 per cent. The general publicity campaign which had for its object the reduction of consumption as a war measure resulted in increasing savings expressed in money terms over 20 per cent. In 1918 approximately 30 per cent of our national income appears to have been saved.

FACTORS IN CAPITAL ACCUMULATION

Several important generalizations concerning the factors which determine capital accumulation can be drawn from our experience during the last five years. The volume of capital accumulation is affected first and foremost by the volume of productive output. Every increase in production leads quite directly to an increase in capital accumulation. Conversely every fall in productive output will reduce it. Second, other things being equal, capital accumulation is likely to be largest when the share which goes to profits is large. The organization of our industry under the corporate form and the principles of financial management which dominate the corporate institution inevitably work to that end. Third, it is possible to stimulate thrift by popular education.

VOLUME OF SAVINGS FOR 1919

In 1919 the volume of capital accumulation will be decidedly less than in previous years, even when reckoned in terms of money. This is true despite a further increase in prices. The level of wholesale prices for the year 1919 will average at least 210. But production has fallen off by more than 10 per cent, and with the continuation of the coal shortage may be as much as 15 per cent below that of 1917. This decrease in output would naturally lead to a serious curtailment of savings as compared with the high point reached during the war. With the higher standards of consumption to which the great mass of our people have become habituated, and with the smaller profits and larger dividends of our corporations, the volume of savings measured in physical quantities will fall to the pre-war level.

The farmers of the country are enjoying unprecedented prosperity, and are probably contributing as much to our supply of capital as they did during the war. But we cannot hope to maintain the rate of capital accumulation of the last four years in the face of falling production. The one practical method of increasing it is by the encouragement of thrift. The ideal method of increasing it would be through the maintenance of that high level of productive output of which we found ourselves capable during the war. But with capital and labor in their present moods and with a woeful lack of statistical and other information necessary for the proper coördination of production and demand, the admonition to increase production is a counsel of perfection. The encouragement of thrift remains, then, the one practical method for increasing the supply of capital at this time.

Thrift and Labor

By ALVIN H. HANSEN, PH.D.

Associate Professor of Economics, University of Minnesota

THE central problem of the present discussion may be stated as follows: Is a nation with a high standard of living, or in other words a nation that spends freely, more or less prosperous than a nation which restricts consumption, lives simply and saves thriftily?

BANKING THEORY VS. BUSINESS THEORY

This question at once raises an antagonism between bankers on the one hand and business men on the other. Bankers are always busily engaged preaching the homely virtue of thrift. To them the volume of savings accounts is the prime index of the prosperity of a community. Business men on the other hand are constantly engaged in a huge propaganda to make spenders of us all. It is probable that not far from a billion dollars are spent annually in the United States for advertising. The business man does not want us to save; he wants us to spend. He measures prosperity not by the average family savings but by the average family scale of expenditure.

THE THRIFT SCHOOL VS. THE SPENDING SCHOOL

The labor movement is a record of a similar antagonism. The Schulze-Delitzsch and Raiffeisen Credit Societies, the Rochdale Consumers' Coöperative Societies, now constituting nearly one quarter of the consumers of England, Russia, Belgium, Germany, Austria and Denmark,¹ find the solu-

tion of the labor problem essentially in saving. Through saving and the petty accumulation of property on the part of large masses of people not only does the individual prepare the way for an enlarged future income and provision for old age, but the working class as a whole prepares the way for the coöperative ownership of the whole means of production, and the complete elimination of the profit system. This working class movement thus moves forward in the firm belief that it is gradually staking out for itself the coöperative commonwealth through the program of collective saving. The social revolution will be accomplished not through violence and class struggle but through the homely virtue of persistent and constant saving. This may be called the thrift school of social reform.

On the other hand is the spending school. Beginning with Sismondi, and running through the writings of Rodbertus, Ira Steward and John A. Hobson (to mention only one representative from each of the four great modern nations) we have a group of thinkers who contend that labor must find the solution of its problems not in saving but in spending. The underpaid working man barely living from hand to mouth will not find the way out of his difficulty in a thrift policy which compels him to tighten his own belt, to send his children off to school ill-nourished and unfit for study, and finally to set them to work in the factory at the earliest possible age handicapped in their equipment for life. Rather he

¹ See Monthly Labor Review, March, 1919.

will find the solution in the struggle for a larger share of the product, shorter hours, more leisure, a higher standard of living, better education, better housing, better food, better clothes, more comforts and luxuries. Ira Steward, constant exponent of this theory, even looked forward to the ultimate elimination of both interest and profits through the gradual acquisition on the part of labor of a larger and larger share of the product of industry. Shorter hours, more leisure, higher standards of living, the demand for a larger life and the constant struggle to attain it would ultimately make everyone at once both worker and capitalist. The coöperative commonwealth would be reached not through saving but through spending.

HARMONY OF INTEREST THEORY

But the argument for spending does not always or necessarily extend to the extreme of the ultimate elimination of interest, profits and the capitalist system. George Gunton, disciple and literary heir of Ira Steward, sought to establish the principle that capital itself would be benefited by the enlarged spending of the masses. If the masses live high and spend freely, the great demand for consumption goods gives rise to remunerative employment for capital goods. Hence business is prosperous, profits are good, large surpluses are retained in businesses in order to expand the equipment, and wealthy people are induced to enlarge their fortunes through saving because of the profitable rate obtaining in the employment of capital. Thus a harmony of interest theory is developed. Spending on the part of the general masses becomes an advantage for those who are in a position to save large fortunes. On the other hand saving

on the part of the wealthy becomes a benefit to the spending multitudes in that it supplies them with the equipment requisite for wide-spread employment, and the satisfaction of their high standard wants. A division of labor is thus effected which is mutually advantageous.

If the masses did not spend there would be no profitable employment for capital, and if the wealthy did not save there would be no equipment² with which to obtain employment, incomes and want-satisfying things. Thus the thriftlessness of the masses makes possible the accumulation of huge fortunes. Says Professor H. G. Moulton: "If everybody attempts to make adequate provision for old age through saving and investment there is certain to follow in good time a curtailment of production that results in unemployment and part-time work, and this not only prevents the masses from making adequate provision for the future, but leads to reduced consumption and often to real privation."³ Speaking of the extravagance of Americans, their high standard of living, and the rapid expansion of American industry he says further: "Perhaps most significant of all, it has intensified the concentration of ownership and the development of an aristocracy of wealth. The enormous expansion of capitalistic industry was profitable only so long as consumption continued high. The thriftlessness of the masses of American people gave the impetus to an ever expanding capitalistic production . . . while more thrift on the part of the masses would have re-

² It should be noted that Professor Moulton finds another source of capital equipment in the expansion of bank credit. See *J. of Pol. Econ.* for May, June, July and November, 1918.

³ *J. of Pol. Econ.*, Nov., 1918, p. 880.

tarded the rate of capital formation as compared with the rate we have had under the impetus of high consumption. . . . This large consumption on the part of the masses has made it profitable for corporate industry continually to expand through the process of putting funds directly back into the business; it has thus given us vast fortunes for the relatively few and little if any provision for old age for the many."⁴

THE RELATION OF SAVING AND SPENDING TO THE CYCLE OF PROSPERITY AND DEPRESSION

But this alleged harmony of interest does not run a uniformly smooth course. Modern business is always being disturbed by the wave-like cycles of prosperity and depression. Why does not this mutually satisfactory spending and saving work out in continuous prosperity? The reason, we are told by John A. Hobson, is that the rich save too much and the masses spend too little. The fundamental cause of depression may be found in the existence of surplus incomes. Wealthy people desire to increase their fortunes. They do so by saving instead of spending. These fresh savings are rapidly translated into additional capital equipment. This extension of capital equipment soon results in an enlarged output of consumers' goods. The masses of people with their limited incomes are unable to purchase this enlarged outpouring of consumers' goods. The recipients of surplus incomes have ample purchasing power to take off this surplus of production but they are unwilling to spend enough of their incomes to prevent the over-production of consumers' goods. No matter how much production is directed toward

the things that would appeal to the rich, even their ostentatious wants are so amply provided for that they always will desire, in periods of prosperity, to invest and save too large a proportion of their incomes.

Since they are themselves unwilling to spend the proper proportion of their incomes on consumers' goods the new investment must necessarily produce goods intended for the masses. Because of the limited incomes of the masses and their inability to purchase this new outpouring of goods the inevitable result is a congested market, depression, lower prices, smaller profits and smaller incomes for the rich. Since the wealthy class would be unwilling to have their established scale of expenditure reduced they will continue to maintain the same standard, despite the reduction of incomes. The result is that less is saved and invested in capital equipment. Thus consumption is given a chance to catch up with the capacity of the industrial equipment, surplus goods are worked off and prices again rise.

With the return of higher prices, profits are increased, incomes are greater, a larger and larger proportion of the surplus incomes are invested in capital equipment, and production again outruns consumption.

Surplus incomes, therefore, produce excessive saving and result in an incessant attempt to employ capital in excess of the demand of the ultimate consumer. Thus Hobson explains the ever recurring cycle of depression. Surplus incomes must be reduced by taxation, spending must be increased by raising wages, shortening the work day, and increasing the general standard of expenditure.

Such a solution of the problem of depression appears to the writer to be

⁴ J. of Pol. Econ., Nov., 1918, p. 874.

not only chimerical, but to be based on a completely erroneous analysis of the cycle of prosperity and depression. The writer hopes to publish elsewhere a detailed study of business cycles based on monthly data for Great Britain, Germany and the United States. While it is impossible to go into detailed arguments in this paper it is his conclusion that neither under-consumption or over-production produce the economic cycle. In brief the solution of the problem of the business cycle must be found in the movements of money, credit, prices and profits. Leading exponents of this view, it will be at once recognized, are Fisher, Veblen and Mitchell, there being, however, wide differences in their theories particularly as to the number of factors involved.

The various financial and industrial indices relating to the business cycle fall into three groups in point of synchronous movement. The first may be called the *Banking Group*, including such indices as bank reserves, bank deposits, bank loans and discount rates. The second may be called the *Investment Group*, which includes stock prices, shares traded on the stock exchange, liabilities of business failures and bank clearings. The third may be called the *Industrial Group*. This group includes wholesale prices, production of pig iron, railroad gross earnings, imports, unemployment and immigration. The series in each group are almost completely synchronous. The Banking Group precedes the Investment Group in point of time by two or three months, while the Investment Group precedes the Industrial Group by from six to twelve months. Substantially similar results were found for Great Britain, Germany and the United States, the movements

being practically synchronous in all three countries.

The casual relation runs through the sequence of bank reserves, discount rates, bank credit, issue of securities, purchasing power of business industries, prices, production and profits. The movement of the Banking Group presently affects the Investment Group, and the combined influence of these two work out in due time their influence on industry, prices, production and profits. The inevitable inability of the banking credit, of all the advanced nations combined, to expand indefinitely puts a halt to the period of prosperity. Ensuing depression releases the strain on banking credit, and the freshly accumulated reserves soon give rise to another period of expansion and prosperity.

The evidence for the support of the above more or less dogmatic statements cannot here be presented, but it is believed that there is ample justification for the statement that under-spending and over-saving are not among the forces that produce the cycle of prosperity and depression. Enlarged spending is not the solution for this modern evil which so vitally affects labor.

HIGH CONSUMPTION AND THRIFT RECONCILED

But the position taken by Professor Moulton in his recent articles on Commercial Banking and Capital Formation in support of high consumption has nothing inherently to do with the fluctuating business cycle. May it not be that a nation, which spends freely and indulges in high consumption, will have always, both in prosperity and depression, more employment, larger production, higher well-being and a greater supply of capital equip-

ment than a nation closely parsimonious and thrifty? This is an entirely different matter. We are again faced squarely with the question as to which policy will bring the greatest wealth and well-being to a nation, the policy of universal thrift or the policy of high consumption and free spending.

With regard to this question the writer is in agreement with Professor Moulton. Entirely apart from the surface waves of the business cycle, universal high consumption makes for a deeper, more permanent body of prosperity, larger production, more capital equipment and greater wealth and well-being.

But it must be noted that high consumption does not mean wasteful consumption. Thrift and a high scale of living are by no means antithetical. Thrift and saving do not necessarily result in capital formation, or in an addition to the industrial equipment. Thrift and saving may just as likely result in an enlarged stock of durable enjoyment goods. Herein lies in part the reconciliation between spending and saving. A thrifty workman by means of a niggardly scale of living is accumulating a good sized savings account. The bank invests his savings in railroad securities from the proceeds of which the railroad enlarges its equipment. Another equally thrifty workman, but with a more generous scale of living is making gradual payments on his house until he becomes the full-fledged owner of a comfortable home. Thrift in the first case results in capital formation. In the latter case it results in an addition to the stock of durable enjoyment goods. One type of thrift involves a low scale of living, while the other implies a high standard of living. In the one case

thrift adds to the supply of industrial equipment; in the other it increases the demand. Effective demand is fundamental as a basis for national prosperity.

France is an excellent example of a universally thrifty nation. But she has not been a model of prosperity. Would not the French nation have been more prosperous if her people had invested less of their income in the securities of Russian and Balkan railroad, mining and industrial concerns, and had spent more of their income on a higher standard of efficiency, better homes, education, comforts, etc.? The result would have been a tremendous boom for her industries, more employment for her working class, and a richer life for her now too niggardly peasants.

A THRIFT PROGRAM AND AN AMERICAN STANDARD OF LIVING

A universal national thrift policy which results in large overseas investments and financial imperialism is not the sort of thrift which will be of benefit to labor. Neither is a thrift program desirable which results in an un-American standard of consumption. We would not be pleased if American labor generally should adopt that sort of thrift practiced by certain low standard immigrants who live on a miserable scale while accumulating a small fortune to carry back to their own country. Such a thrift policy not only makes life miserable for the individual family and lowers the nation's standard of living, but at the same time brings stagnation to industry and forces the investment of surplus savings abroad.

But there is a national thrift policy which would be of benefit to labor. It must not be a thrift policy which leads to financial imperialism, industrial

stagnation and niggardly consumption standards. It must be a thrift program which results in generous but judicious expenditure, high standards of living, large production and general industrial prosperity.

The coöperative movement is a thrift producing movement. But it should be noted that it does not inculcate the kind of thrift which results in low standards of living and reduced consumption. A Scottish coöperator using the dividends received on his wife's purchases at the coöperative store to meet payments on his house laughingly complains that his wife does not spend enough, for the more she spends the sooner will the house be paid for! The coöperative movement as a thrift movement does not merely result in the accumulation of considerable capital in the form of retail stores, wholesale houses, manufacturing plants, stocks of goods, etc., but it uses its credit and its profits as a means whereby consumers with small incomes may come to possess durable enjoyment goods and thus raise their standard of living.

The coöperative movement reconciles saving and thrift with high consumption in another fashion. On the continent of Europe, particularly in Belgium, it has been made a device for coöperative saving by means of which provision is made for sickness, unemployment, invalidity and old age. Here again is an agency for thrift which does not unduly depress consumption during the saving period, and which protects the standard of consumption throughout the vicissitudes of life. Individual saving on a scale sufficiently large to protect the family against the contingencies named is not only exceedingly wasteful, but requires of necessity a niggardly and

narrow scale of consumption and a low standard of life. Such thrift and saving not only doom the individual family to fearful sacrifices, but if carried on universally would deprive the nation of that general industrial prosperity that goes with high consumption.

But a national program of thrift which is not to sacrifice high consumption cannot rely on or wait for a voluntary coöperative movement, especially in America where it has made such meager headway. There should be a national program of thrift which does for its citizens what the coöperative movement does for its membership. Social insurance in all its aspects—accident, sickness, invalidity, old age and unemployment—is clearly a part of an economical, worth-while thrift program. Above all a thrift program should in some way seek to increase home ownership. The Federal Farm Loan Act makes provision for the utilization of the coöperative credit of the nation for the laudable purpose of helping farmers to become land owners. Why should not the nation's credit be mobilized in some similar fashion for the purpose of assisting our citizens to become home owners. President Emeritus Eliot of Harvard University contends that two of the reforms most urgently needed in America lie in the fields of housing and public health. A national home loan measure would stimulate state activity along the same line, as has been true in the case of the Federal Farm Loan Act. A national housing program would stimulate thrift, that kind of thrift which does not lower consumption, which raises the standard of living, and which makes for employment, productive activity and industrial prosperity.

Organized Labor's Attitude Toward the National Thrift Movement *Annals, Jan/20*

By FRANK E. WOLFE

Of the American Alliance for Labor and Democracy

DURING the past year hundreds of thousands of workers who have spent a large portion of their years working for others have suddenly become employers. They have made a discovery and it is bringing results. They have employed their dollars, their savings, and put them to work earning an income. It has become a fixed habit with these thousands of workers, men and women, to devote a part of each week's wages to a certain stipulated saving and to put it where it makes a certain and safe investment.

The second discovery made by these workers was that as their savings grow, the dollars, their first saved dollars, earned in their work were in turn immediately employed—that their accrued interest, the wages their working dollars were earning, was willing to work for them and to their continued and growing benefit.

To many of the workers their newly acquired knowledge was such a wonderful thing that they wanted others to know the wonder of it. Out of this has grown savings clubs among labor groups and it has always made smooth the way for resolutions endorsing war savings and thrift stamps.

To most of these workers the discovery came by reading in the labor press something about war savings stamps. Many times this came through resolutions passed by the convention of his or some other union wherein there was the heartiest and most wholesouled endorsement of thrift stamps

The great benefit to labor, through regular purchase of war savings stamps, was early apparent to leaders of organized labor in America. Samuel Gompers, president of the American Federation of Labor, early recognized the value of war savings stamps and he expressed this in a statement, issued to be sent broadcast through the labor press, in which he said:

Let not the great issues and events of today take our thoughts wholly away from those small and quiet duties without the performance of which the larger scheme of things may be endangered.

The great wheels often must be turned by a silent power that exerts its force where there is no limelight and no great acclaim. But the great wheels must be turned.

The sale of war savings and thrift stamps helps to keep the great wheels of the American government turning at their proper speed. With the high pitch of war excitement almost gone, this work is one of perseverance in the line of duty. The men and women who sell and the men and women who buy are doing a work no less worthy than it was when our troops went charging over the Hindenburg line. It is no less worthy now than it was when the drums were beating. And it is no less needed.

To the 165,000 secretaries of war savings societies may I say that theirs is a fine work, a necessary work and one to which every thoughtful person will wish to bring them help.

But there is another side to the sale of these little stamps. While it helps our government, it also helps those who buy. It helps them to be careful of their money. It helps them to lay by a little which will stand to their credit as a resource. This is surely a worth while thing to do.

And so the work of selling war savings stamps does two things:

It helps get money for our government at a time when it needs money.

It helps the purchaser of stamps to accumulate a little money that he may need at a later time.

It is good work. A grateful Republic cannot fail appreciation of the toil and sacrifice of every person who has a part in this wonderful process of gathering in the mites of the people until they bulk large in great totals that go to keep the machinery of democracy in order.

Later the American Federation of Labor, at the annual convention at Atlantic City in 1919, passed a resolution warmly supporting the National Thrift Movement, which, after a strong preamble, resolved, "that this convention do approve of the continuation and extension of the war savings and thrift stamp institution as a necessary peace time institution or the substitution of a national savings institution akin in character and method which shall prove helpful to safeguard the earnings of the toiling masses of our country." This act of unqualified approval of the chosen representatives of nearly four millions of organized workers greatly stimulated interest in war savings stamps as a safe and wise investment for organized labor, either as individuals or through their organizations.

Frank Morrison, Secretary of the American Federation of Labor, who has always shown a deep interest in

war savings, wrote to the director of the Savings Division of the Treasury Department transmitting the Atlantic City resolution and added:

This campaign, the outgrowth of a program of war finance, we believe to be essential as a permanent peacetime institution. I am confident that the officers and members of the unions affiliated with the American Federation of Labor will coöperate in the movement. The government savings securities are safe and profitable and may be converted into cash at a profit on short notice.

Many other labor organizations, local, state and international, at their conventions passed strong resolutions advocating the investment in war savings stamps as an excellent thing for the members of their organization. Labor recognized in war savings stamps an opportunity to extend and strengthen its power by making each worker more independent, more self reliant, dependable and safe in any emergency.

Any financial secretary will unhesitatingly say that the man who buys war savings stamps regularly is the surest one to come up promptly and pay his dues. These secretaries have become strong advocates of systematic purchase of thrift stamps. They know that the worker who has his dollars working for him has made a discovery that leads on to security and reliability.

*In a Symposium on The New Am Thrift
where writers were eloquent on
The Garbage Pail, a National Thrift Barometer
The Function of Salvage in the Education
- of Ind. Workers.*

Thrift and Business

By GEORGE W. DOWRIE

Dean of the School of Business, University of Minnesota

POST-WAR CONDITIONS

FIGURES for the first nine months of 1919 show the smallest number of mercantile and industrial failures for any like period since 1881. A very large volume of trade is being handled at satisfactory rates of profit. The present volume of sales of any given retail or wholesale establishment seems to depend quite largely upon its ability to secure an adequate supply of goods from wholesalers or jobbers and manufacturers respectively. The manufacturer in his turn is limited by his success in obtaining raw materials from an under-supplied market. If one is to judge by the usual indicia such as bank clearings, volume of trade, demand for loanable funds and for labor, we are enjoying a period of great prosperity in spite of the almost universal prediction to the effect that a period of depression would set in immediately after the cessation of hostilities.

In spite of the fact that the most optimistic entrepreneurs expect the usual post-war decline in prices, this decline has not set in to any marked degree, in fact, the prices of many commodities have continued to rise. A heavy demand for every sort of commodity continues and, in some cases, unheard of prices are being asked and obtained. The high price level has compelled constant increases in wages, which seeming additions to his well-being have in many cases resulted in a falling off in the worker's efficiency as a producer and a greater liberality in his scale of expenditures. This latter has been considerably accentuated by

the feeling of "letting down" after the deprivations of the war period. After two years of restricted consumption, either voluntary or imposed by the government, the natural reaction is in the opposite direction.

Notwithstanding the fact that the business outlook continues good, save for labor troubles in certain industries, a period of falling prices, contraction of credit and general economic readjustment is bound to come. It is the purpose of this discussion of thrift and business, therefore, to point out some tendencies which have been developing during this abnormal period and which should be eradicated from our economic life if they are not to prove a decided menace in the period which is likely to follow.

THRIFT IN THE PROCESS OF SAVING

True Saving.—The industrial system, in order to function in a proper manner, should furnish the maximum amount of satisfaction to society. Such a result can be attained only by certain lines of conduct on the part of both consumers and producers. On the consumer's side, a highly efficient productive system—efficient in the sense of achieving the highest amount of satisfaction of wants—cannot be attained unless his consumption is properly ordered. This involves habits of thrift not only with regard to abstaining from spending but with respect to the spending process itself. "Spending makes business good" can be accepted only with the most careful qualifications. Mere abstinence from

spending, of course, is not good for business. The miser who hoards his surplus in a hiding place is making no contribution toward a satisfactory economic order.

On the other hand, the individual who "wastes his substance in riotous living" has done no better. Our present roundabout method of production involves large advances of spendable funds on the part of a thrift practising public. If we are to substitute for simple direct methods of production the far more effective but time consuming process of "making a machine to make a machine to make a machine" to turn out a given consumable commodity, abstinence must be practiced by large numbers of individuals. If they were to spend all of their respective incomes for consumptive goods like shelter, clothing, food and amusements, the provision of capital goods like factories, railroads and mines would be cut off and mankind would have to revert to primitive methods of satisfying its wants. Not only, then, must there be abstinence, but the resulting surplus must be placed at the disposal of business directly or through commonly established media like savings banks and investment companies. If this supply of liquid capital for the replacement of and additions to the stock of capital goods is not forthcoming, the productive mechanism is seriously hampered and the consuming public, in as much as it is deprived of an adequate supply of goods and services, is the real sufferer.

Personal Thrift.—The present period has not been characterized by habits of personal thrift on the part of the American public. Enormous sums invested in government securities of various sorts under the stress of war have been squandered subsequently by their ex-

change for high-priced luxuries or for the more or less worthless securities of speculative enterprises. Savings deposits have increased but not in proportion to the general increase in the prices of the things which form the usual objective of saving. A considerable part of the government's war issues are still in the hands of the banks, having never been absorbed by the investing public. Here, they have aggravated living costs by their use as collateral for advances for loans at the Federal Reserve Banks, the proceeds of which were used for speculation.

Relation of Savings to Business.—If business is to be adequately financed, there must be, therefore, a constantly dependable flow of new capital from the savings of the public. Systematic habits of thrift must be inculcated throughout all classes of the people. The well-to-do class, in spite of its relatively large earnings, is an entirely inadequate source of supply of new capital. The great masses must be depended upon on the strength of the old saying that "many a mickle makes a muckle." It is not the province of this article to make a disquisition upon the direct benefits of or, better, the necessity of "rainy-day" saving. We are here concerned with the relation of the saving process to the conduct of business. The two go hand in hand, however, for the man who invests his surplus earnings in an enterprise whose product makes for the real welfare of the consuming public does much more than add to his yearly income in the way of interest or dividends and creates a permanent principal as a guaranty against an impecunious old age. He is also benefiting himself and his fellows indirectly by contributing a necessary factor to the industrial process which is providing for their well-being.

As was pointed out earlier, not only must there be a properly directed abstinence from spending but there must be a properly directed spending as well. The maximum degree of satisfaction, which is the goal of a properly conceived economic system, cannot be attained without intelligent expenditure. A properly nourished, well-housed and adequately trained citizenry cannot be realized unless expenditures are directed along lines which are capable of achieving this end. The demand for goods and services is the motivating factor in industrial activity. Consequently, where this demand consists largely of luxuries, to that extent the economic process is perverted and to that extent our *summum bonum* cannot be obtained. The thriftless spender, therefore, injures business in two ways: first, by his failure to aid in providing adequate working capital for business activity, and second, by his unwise demands being responsible for the diversion of business activity into lines which will not result in the achievement of a maximum of social satisfaction.

A nation-wide thrift policy both as regards saving and spending would undoubtedly result in great immediate hardship to many businesses which cater to the harmful or at least less justifiable desires of human beings. Processes which involve considerable economic readjustment are always painful and somewhat costly, but society will be incalculably better off in the long run.

THRIFT IN CONDUCT OF BUSINESS

On the side of thrift in the conduct of business itself, quite as much needs to be said. Granted that the individual consumer did his part in devoting a

portion of his income for furthering production, and that his demands were such as to insure the best use of the productive mechanism, still, if this mechanism were not operating on a high plane of economy and efficiency his efforts would to that extent be lost. We have undoubtedly inherited from the war period some industrial and business standards and conditions which are not consistent with the highest thrift in the conduct of an enterprise.

Necessities of war compelled the sacrifice of economy and efficiency to quantity and speed. Cantonments, ship yards, ships, munition plants, warehouses and an endless variety of other structures had to be rushed to completion at the earliest possible date. The farm resources of the country had to be pushed to new limits if we were to feed our own people and have an adequate surplus to send to our allies. The output of mines and forests had to be increased to the highest possible point in order that the various agencies concerned in winning the war should not be hampered by a lack of materials. Resort was had to methods which ordinarily would be condemned as wickedly extravagant in order to speed up the production of food and raw material and the completion of necessary construction work and manufactured articles.

It is estimated that in one way or another we succeeded in increasing the output of our industries by at least a fourth over that period preceding the war. But this result was achieved at a great sacrifice in money and standards of business efficiency. Prices of essential commodities like wheat, iron and copper were fixed at so high a price that the maximum supply would be forthcoming. As a result a large

number of establishments which were formerly conceded to be submarginal because of their prohibitive operating costs were enabled to operate and add their contribution to that of their more fortunate rivals. Although the war has been over for a whole year and the justification for uneconomical methods no longer exists we are still far short of our pre-war standards of economy and efficiency so far as the conduct of our business activities is concerned.

With the signing of the armistice and the withdrawal of artificial stimuli, the unprecedented volume of production began to fall off. For the time being the decline has been checked by the fact that the advent of peace has been attended by a period of unnatural prosperity due to the vicious circle in which high prices are followed by higher wages which in turn result in higher costs of production and a larger demand for goods, which in their turn result in still higher prices, and so on until a crisis is reached. The crest has not yet been attained but it is quite universally agreed that it is close at hand.

When the reaction sets in it is bound to be attended by a curtailment of production and industrial disorders much more serious than is usually the case, unless our productive efficiency is enhanced. The wasteful business methods justified by the haste and size of war preparations must now be eliminated. They have left behind them in the case of both employers and employees a certain highly undesirable influence. The sort of "easy money" atmosphere which has pervaded all lines of business and resulted in excessive profits in the case of one group and unheard of rates of wages in the other is proving to be detrimental to the maintenance of high standards in industry

and commerce. Its existence is bound to make the suffering in the period of readjustment much more acute. Furthermore, the high standard of living which American workmen have been able to maintain during the war in spite of high living costs will be seriously impaired by a decided decline in production and a consequent sharp reduction in wages, or worse, by actual unemployment.

The world is being stirred at present, as never before, by serious economic and social unrest. When prices go down, industrial activity is severely curtailed and labor's standard of living impaired, we may expect to see the present unrest turn into an irresistible demand for the overthrow of the present economic order, unless the loss in productivity of labor can be successfully offset. If the present prevailing methods of wage payment do not stimulate in the worker an interest in his job and, therefore, do not result in the maximum of product consistent with good workmanship and a proper regard for his well being, methods will have to be devised to secure this result. No economic system can survive if the tens of millions of individuals who are chiefly responsible for its functioning are mere "servants of the fee."

On his side, the entrepreneur can do much to increase the efficiency and, therefore, the productivity of his business. During these days of lavish spending and high-speed production he has reaped large profits in spite of a pretty general neglect of certain "loose ends." It is comparatively easy to make money in a régime of rapidly rising prices. Farmers, merchants and manufacturers whose methods are notoriously unbusinesslike will have what normally would be a deficit offset by

unexpectedly large receipts due to higher prices.

Inadequate financing of enterprises, unwisely directed purchases of equipment, raw material, or merchandise, wasteful marketing methods, and inefficient direction of the labor force are a burden upon the consumer and unless artificially bolstered by rising prices sooner or later come to an untimely end. The gospel of better business methods,

ought to be preached as we near the end of such a period as the present. Business can endure the burden of carrying along the inefficient enterprise when times are prosperous, but this is a load which the consuming public ought not to bear. Inefficiency ought to be eliminated by means more lasting and less cruel than the collapse of the unfit establishment in times of financial stress.

Thrift and the Financial Situation

BY A. C. MILLER

Federal Reserve Board, Washington, D. C.

WHAT is the financial situation of the United States? More particularly, what does our financial situation disclose that makes the practice of thrift and saving a matter of very great national urgency at the present time? The great outstanding facts in a summary view of our financial situation, which are pertinent to this inquiry, are:

1. The prodigious scale of our public expenditures;
2. The unprecedented weight of our direct tax levies;
3. The excessive volume of our governmental borrowing.

Extraordinary expenditures occasioned by the war thus far amount to over thirty billions of dollars with the prospect that the figure will be raised to thirty-five billions by the end of the current fiscal year. Direct tax levies on individual incomes and the earnings of industry are running at the rate of about six billion dollars a year. The money borrowed by the Treasury to finance the public requirements, since the beginning of the war, amounts to twenty-five billions of dollars.

These are stupendous figures. Events and conditions since the armistice are beginning to bring home to many of us for the first time the economic meaning to the nation and to the life of the average citizen of the financial situation thus developed by the war and left after its close.

MAGNITUDE OF WAR EXPENDITURES

Levy on Capital Accumulations

Expenditures of the magnitude of those incurred by the United States for the war unquestionably mean some considerable impairment of the rate of the nation's capital accumulations during the past two and one-half years. No country is rich enough to stand such a drain upon its economic resources as the United States has been subjected to during this period without suffering an appreciable impairment of its capital account. The extent to which the huge expenditures of the government have cut into the capital accumulations of the country can not be determined, but common observation and complaint bear evidence that it constitutes a very important item in the economic cost of the war. The circumstance that, during the war the whole thought and energy of the nation was concentrated on the problem of increasing production facilities for the production of war supplies, resulted in less that the normal provision being made for the upkeep and extension of such of the country's industrial equipment as was not primarily needed in war-time, however important it might be in peace-time.

Deferred Capital Replacements

The run-down condition of the transportation system of the country, particularly the street-car service, and the great shortage of dwelling house

accommodations are striking examples coming within the experience of most people of the way in which the war and the insistent and voracious demand it made for first call upon the productive capacity and resources of the country, interrupted the up-keep of many of the productive facilities of the country not clearly essential to the prosecution of the war. There are many other evidences here, there and elsewhere throughout the country, of the fact that the war has left the capital equipment of the nation—that is, buildings, tools, machinery, etc.—in many important fields of industry in such a condition that much must be done to bring it up to a normal state of adequacy and efficiency. More buildings, more machinery, more trackage, etc. must be built. These things are a part of the industrial equipment of the community—they are its capital. On them depends the productivity of American industry and American labor. Impairment in the rate of growth of capital means impairment of our industrial capacity. The productivity of American industry and labor depends, more than can be said of any other community in the world, upon the character and the extent of the industrial equipment with which they are provided. Our rapid industrial progress in the past, it has long been recognized, was due largely to the fact that abundant provision was always made out of the product of industry for its further extension and development and improvement.

Before the war about one-sixth of our productive power, as nearly as can be estimated, was devoted annually to the improvement and extension of the industrial equipment and plant facilities of the country, to the development

and exploitation of its natural resources, to the building of roads and houses, and to many other things, which added much every year to the capital resources and productive capabilities of the country. In brief, before the war about one-sixth of the wealth, which we annually produced, was saved and practically all accrued to the nation's industrial- and financial-capital account.

During the war much, if not most, of our customary industrial expansion was suspended, despite the fact that there was a notable increase in the individual savings of the American people. All of the new savings and most of the normal savings during the period of the war were absorbed by the government and were used directly or indirectly in furtherance of war production. No doubt much of the new industrial equipment called forth by war production will, also, be found useful for peace-time production and, to that extent, will not be lost altogether to the capital account of the country. Nevertheless, most of the savings appropriated for public use in the time of our war emergency represent something which, from the point of view of the nation's peace-time economy, must be regarded as unproductive expenditure and economic waste. There is, therefore, a shortage in the capital equipment of the country due to the diversion of the bulk of the country's savings during the war from the production of peace-time facilities to war-time facilities, which must somehow or other be made good if American industry is to maintain its normal productivity. There is but one known economic method by which this result can be accomplished and that is the method of saving.

CAPITAL REPLACEMENTS MADE THROUGH SAVING

How is saving related to the all-important matter of restoring and improving and increasing the industrial equipment or capital of the country?

To most people saving is thought of as laying aside money, or as giving up something which has customarily been consumed or which might be consumed. This is, however, merely the first step of the saving process, as a brief illustration will disclose. Perhaps I am on the point of buying an automobile. Heeding the injunction to save, I decide to give up my purchase of an automobile, at any rate for the present, and until the present national and world emergency is measurably over. What does my action in foregoing the purchase and use of an automobile do to help industry? Specifically, how does it result in an addition to the industrial capital of the country and thus help to make industry more productive? So far as I can trace my action all that I save is the dollars which the automobile would have cost and which the gasoline, tires and other requisites for the operation of the automobile would have cost. What do my saved dollars do to improve the economic situation—to repair or build factories and otherwise expand production facilities? I can see what my saved dollars do to give me dollars against the contingencies of a rainy day sometime in the future by assuring me of something in the bank with which to buy food and clothing, but I have still to be shown how my refraining now, for example from the purchase of an automobile, increases the productivity of industry, makes goods more abundant, and thus helps to bring down prices and improve the financial situation generally.

When you save dollars, Mr. Reader, you save what dollars will buy. In the case in question, your going without an automobile either saves that automobile for some more important use than your pleasure or, what is more likely, supposing that others are doing as you are doing, it saves industry the necessity of devoting as much labor and material and machinery to the production of automobiles as would otherwise be necessary and thus releases that labor and material and machinery for something else, which, in the existing circumstances of the country and the world, is more necessary. In brief, when you save money by cutting down your current consumption, you save more than dollars and you save more than the goods that you go without. You save the labor that it costs to produce those goods and you liberate the labor and productive power thus saved for the production of other things—such as, machinery, buildings and other much needed requisites of production—which it is most urgent the country and the world should have more of at the present time.

DIRECT TAXES AND CAPITAL ACCUMULATION

Diversion of Capital from Channels of Industry.—The need of a great increase in individual savings, in order to provide the requisite capital for expansion of our industries, gets much additional emphasis from the circumstance that a large part of the tax revenues, now being collected by the government under the new methods and the high levels of taxation which were developed with the war, are undoubtedly eating into the current savings and, therefore, the current capital accumulations of a very important

section of the nation's saving class. The tax revenues, which it is estimated will be collected by the government for the fiscal year 1920, aggregate six and a half billions of dollars. The great bulk of this revenue comes from surtaxes on the higher grades of income and from excess profits taxes on business. Large incomes and the earnings of business are, also, the source from which has hitherto come a principal, if not the principal, part of the savings of the country and the new capital, which from year to year became available for the use of industry.

Receivers of large incomes for the most part do not spend all their income for current consumption but invest a considerable proportion, probably the greatest portion, in industrial undertakings. The stream of saved income that flowed from this source into industry, supplying it with new capital, now flows, to a large extent, into the public treasury, supplying it with the means of meeting its current disbursements. The current expenditures of the government are not to any appreciable extent to be regarded as economic expenditures. It is only indirectly, as the income of the government is used in liquidating war contracts, etc., and thus flows back into the channels of business, that any considerable portion of it will be saved and accrue to the capital account of the country.

While it is impossible to estimate the extent to which the diminution in the flow of savings from the incomes of those who bear the main burden of high taxation is thus offset, it does not seem likely to be sufficient to invalidate the proposition that the extremely high direct taxes, which are being levied by the government of the United

States, are eating into the current capital accumulations of the country to a degree that is considerable. The effects will be serious unless the loss thus arising is made good by increased saving on the part of all those in the community whose ability to save has not been impaired as a result of the financial situation occasioned by war. This means, to put the matter briefly, that the increased savings of the many must make up for the diminished savings of the few, so long as the financial needs of the government, or other conditions, or considerations of social policy, make it necessary to keep direct taxes at their present high levels.

Affect of Taxes on Production.—Questions of direct taxation are commonly regarded only from the points of view of fiscal expediency and distributive justice. In ordinary circumstances these points of view may suffice, but in the present extraordinary circumstances of our country and the whole world, a more fundamental point of view must be taken. With the capital account of all the leading countries of the Western World seriously depleted, as a consequence of the great war, and with the burden of direct taxation reaching a point never before thought possible, the effects of taxation upon the productive economy of the several countries must be given thoughtful study. The war and every experience, which has followed since the armistice, has taught us to think in terms of production. A considerable section of the population of Europe—the most highly organized part of the world—is and has been in a state of want with destitution and, in some parts, starvation threatening, because of insufficient production. Production, more production, more efficient production, is an urgent need of the world

in the throes of this, the most severe after-war crisis ever experienced.

Saving and Production.—In these circumstances fiscal and financial questions must be looked at from the point of view of national economic interest, as well as from the point of view of social justice. Looking at the scale of our present direct taxation from the economic point of view, it does not admit of question that the rate of growth of capital in the United States will be seriously affected unless, to repeat the statement, the savings of the many make up for the decrease in the savings of the few. Dependent as the growth of industry and production is upon the stream of capital with which it is fed, saving is the urgent need of the hour. Saving is producing. More of us must make our dollars produce. Things, which are now scarce and dear because production is inadequate, will then become more abundant and prices fall.

Saving and the Price Level.—But saving will do more than this to improve the financial situation. Saving will not only bring down prices by increasing the production and supply of goods but will bring down prices by reducing the supply of money. The most troublesome feature of our financial situation is the high and rising level of prices. Recent events are showing that high and rising prices present more than a financial difficulty. They are the cause of our acute cost of living problem and the industrial unrest and general unsettlement of mind and the financial instability which invariably attend great price disturbances. Reasonable stability of value in the monetary standard is necessary to a good state of mind in a highly organized industrial community. In-

stability inevitably breeds unrest and unsettlement.

Until the upward movement of prices is arrested and the dollar begins to recover its lost value, we may expect to have an unsatisfactory and troublesome financial situation with the evil economic and social consequences, which such a situation invariably entails. To correct the existing financial and price situation is, therefore, tantamount to taking the most important step toward the correction of our current social and industrial unrest. People are everywhere uneasy and apprehensive because of the declining value of the dollar. To restore the dollar to something more nearly approaching its normal value and to reduce prices may, therefore, be said to be the most important financial problem before the country.

Factors Controlling Price Level.—That there is no way of handling the problem that does not involve the practice of thrift and saving by all sections and classes of the country upon an intensive scale becomes clear on examination of the financial factors that have helped to bring prices to their present levels.

Increased Currency and Underproduction.—Speaking in broad terms, changes in prices proceed from changes in the relation of the volume of purchasing media (what, in common speech, is called money) to the volume of goods offered for sale. When people, generally, have more money in their pockets, or more credit at their banks, with which to buy, than there are goods on the shelves of shopkeepers, which can be bought, goods get dear and money gets cheap. In other words, when there is more money seeking to buy goods than there are

goods seeking to buy money, prices rise and their rise will go on as long as the increase in the supply of purchasing media or money proceeds at a faster rate than the increase in the supply of purchasable goods.

GOVERNMENTAL BORROWING

That excessive supply of credit and currency has been one of the principal influences in putting up and keeping up prices in the United States is incontestable. That excessive borrowing by the government has been the main occasion of the excessive increase in the volume of purchasing media seems pretty clear, if, by *excessive* borrowing be understood, not borrowing in excess of what the government has required to defray its expenditures, but borrowing in excess of the current savings of the country.

Extent of Government Borrowing.—The Treasury of the United States has borrowed, during the past two years and a half, over \$25,000,000,000. Of this amount about \$21,500,000,000 have been borrowed by the issue of bonds. The remaining three and a half billions have been borrowed by the issue of short-dated certificates of indebtedness. Twenty-five billions in the course of two years and a half is an extraordinary amount of money to raise, even for a country as rich as the United States. It averages about \$1,250 for every American family. It is an average of \$500 per year for each such family. That such an amount could be taken out of the average income of the American people, except as they greatly reduced consumption and greatly increased savings, needs no demonstration.

Extent of Loans from Savings.—People of moderate means who did their full duty in subscribing to the loans of

the government by actually cutting down their current expenditures and paying for their bonds in dollars actually saved out of their incomes know from their own experience that there is no method by which such vast loans can be taken up and paid for except by the practice of severe economy. It was because all of the people did not practice economy to the requisite degree that the savings of the country were not adequate to take up the securities issued by the Treasury as genuine "savings loans." To the extent that the borrowings of the government were in excess of what were paid for by savings, the loans became "credit loans" and, as such, resulted in a great increase in the volume of the country's circulating credit and its currency.

Expansion of Banking Credit.—The following table shows for selected dates, under the heading of "Deposits," the increase which has taken place in the volume of credit extended by the banks (national and state banks and trust companies) and, under the headings "Loans and Discounts" and "Investments," the operations against which the newly created credit was extended. The dates selected are: (1) the eve of our entry into the war; (2) the armistice; and, (3) the most recent date for which data are available:

Date	Gross Deposits	Loans and Discounts	Investments
(In millions of dollars)			
March, 1917	24,863	17,020	4,955
November 1, 1918	28,862	19,792	8,909
October, 1919	33,159	22,275	9,751

The above figures, which are partly official and partly estimated, show that, between March, 1917, and November 1, 1918, 3,999 millions of

new banking credit in the shape of so-called deposits were created—an increase of 16.1 per cent. Similar comparison for the item “Loans and Discounts” shows that between the same two dates there was an increase of 2,772 millions—an increase of 16.3 per cent; and that, for the item “Investments” for the same dates, there was an increase of 3,954 millions—or 79.8 per cent.

It will be noted that the most striking increase of percentage is found in the item “Investments” between the dates March, 1917, and November, 1918, when an increase of close to four billions of dollars is shown in the investment holdings of the banks. This was the period when the government’s great bond-issuing operations were at their height: The banks were under pressure to make heavy investments of their credit in subscribing for government loans; they were also extending credit accommodation on liberal terms to their customers for the like purpose. This was also the period when the total currency in circulation was increasing most rapidly—the increase between March, 1917, and November, 1918, amounting to over one billion and a quarter.

But the expansion of banking credit did not come to a stop with the armistice. Figures given in the table above show that expansion has continued at an alarming rate since then. And the end is not yet assuredly in sight. Between the dates November 1, 1918, and October, 1919, 4,297 millions of dollars of new credit have been created; loans have increased 2,483 millions of dollars; and investments 842 millions of dollars.

It thus appears that for the whole period, March, 1917, to October, 1919, 8,296 millions of dollars of new bank-

ing credit have been created, most of which was undoubtedly occasioned by the exigencies of government financing.

It has recently been estimated (*Federal Reserve Bulletin* for October, 1919, page 942) that the banks of the country hold among their investments over four billions of dollars of government war securities (Liberty Bonds, Victory Notes or Certificates of Indebtedness) and, among their loans and discounts, two and a half billions or more representing loans made to customers secured by government obligations and made, presumably, for the most part, in aid of customers’ subscriptions to government loans. Altogether then, it appears that the banks are carrying, directly or indirectly, between six and seven billions of government war obligations against which has been extended newly created credit in the form of deposits or currency.

Influence of Bank Credit on Prices.—This newly created credit, like the new currency, constitutes an addition to the supply of the country’s purchasing media. It is for all practical purposes to be regarded as money. It is acceptable as a means of purchase and payment. It acts on prices substantially the same as money. It is the new and large addition to the country’s circulating media, resulting from the placement of so large a portion of the Government’s loans in the form of “credit loans”—that is, in excess of what the current savings of the people would support—that is largely responsible for that feature of our financial situation which has resulted in the continuing high prices, of which there is so much complaint.

The best way to improve our price situation is to improve our credit situation. Indeed, no great improvement in the price situation need be

looked for until the credit situation is materially improved. The banking and credit situation will improve as the large amount of war loan paper and investments now carried by the banks is liquidated. There is only one way to liquidate them and that is out of the proceeds of savings. Those who are debtor to the banks for credit accommodation in aid of subscriptions to government loans must be made to take up their obligations to the banks out of their individual savings, if it is at all possible for them to do so. If they can not do it, or, rather, to the extent that they can not do it, others must in effect do it for them; others must save and out of their savings buy Liberty Bonds in the market. Thus will the market for government bonds be improved and thus will it be made possible for the banks to liquidate by selling in the market bonds, which they have bought on credit, and their customers, the bonds which the banks are holding as collateral. Such liquidation will at once reduce the loan and investment accounts of the banks on the one side and their deposit liabilities on the other; and it will, in addition, bring a return flow of currency to the banks. It is thus that there will result from the process of saving, reduction in the volume of purchasing media and decline of prices.

Reduction of Inflation by Saving.—
If everyone had done his full duty dur-

ing the war by voluntarily rationing himself and saving to the requisite degree, most of the expansion of credit and currency and inflation of prices, from which we are suffering, would have been avoided. Because there were financial slackers who did not do their duty, expansion of credit and currency was carried to the point of inflation. The evils of inflation, of which the President warned the nation in his War Message of April 2, 1917, are now upon us in the shape of high cost of living, profiteering, speculation, reckless extravagance and industrial unrest and strife. These evils are to be reckoned as a part of the cost of the war. They are the cost of inflation. That cost must now be met. Until it is met, those evils will remain to plague us. Indeed, there is danger that they will grow worse through postponement or through national self-delusion that they can be escaped. Recent months have given dramatic evidence that the appetite for inflation, like most other appetites, grows by what it feeds upon. Inflation is breeding inflation. A halt must be called. Saving must again become the order of the day. We have too much credit and too much money outstanding in the United States—above all, too much unproductive credit. Its volume must be reduced. There is but one sure method: that is saving.

Governmental Thrift Through a National Budget

By CHARLES WALLACE COLLINS

Author of *National Budget System and American Finance*

THE American government is the greatest spender in the world. In the past, before the war, expenditure of public money attracted little or no attention in this country. Our vast sources of national wealth had hardly been touched. The money for the running of the government was raised largely by indirect taxation and the people did not feel that they were really supporting the government. Many times in the quarter century preceding the late war the treasury received more money than was necessary to meet appropriations by Congress. In other words we were often embarrassed by a surplus in the treasury. This situation was due largely to a tariff policy which was formulated and put into effect not primarily with the idea of supporting the government but for other reasons ordinarily described under the term "protection." The revenue side of financial administration was not directly related to the expenditure side.

During this period there was no demand for economy in the administration of the government made by the people. The question of financial policy from the standpoint of government economy never entered into political discussions either in the congressional or presidential elections. No emphasis was laid on the method of procedure in arriving at the financial needs of the government or on the method of procedure of Congress in granting funds for this purpose. We felt that we were too rich to bother about these matters. The expenditure of a few hundred

million dollars or even a billion dollars appeared of no great consequence to a strong young nation in possession of the richest country in the world.

Thus grew up without studied adaptation a system of financial procedure which is peculiar to this government. It was not based upon a scientific study of the problem of budgetary procedure but represents accidental accretions and circumstantial adjustments from time to time without coördination. The method has never at any time proven satisfactory to either the executive or to Congress but nevertheless, being a practical people, we were able to make it work. We even financed the war under it without plunging the government into bankruptcy, but surely no other nation could have stood the strain.

NATIONAL FINANCING IN THE PAST

A brief description of this system, or lack of system, may be in point. In the first place the bureau chiefs, or such other heads of the various organization units which have disbursing officers who spend the money appropriated out of the public treasury, make estimates embodying their requests for the expenditure of money for the coming fiscal year. These estimates are drawn up in the early fall and are required to be transmitted to the Treasury Department by October the fifteenth. They represent the plans and ambitions of the bureau chief. He is, if he is a good official, naturally interested in the expansion and development of the service under his jurisdiction. The greater

his service the more honor to him. He does not make his estimates with a view to the total expenditure of the government. He is interested in his own bureau. According to the practice of Congressional committees there is a strong likelihood that some reduction will be made in his estimates. In anticipation of this the practice has grown up of estimating rather liberally so that if cuts are made ample funds may be left to carry out the plans of the bureau.

The heads of the departments have the legal authority to revise the estimates of the various bureaus under them. In fact it is the assumption of the law that these bureau estimates are really the estimates of the head of the department. But the head of the department has no special organization to enable him to make this revision and he certainly has no time to do it himself. In some cases he may order certain reductions in the estimates of a bureau but this is exceptional. There is no systematic attempt to supervise and restrict the demands of these various bureaus for money out of the Treasury.

According to law these estimates for all of the departments and establishments of the government are sent in to the Secretary of the Treasury. He is required to classify them and have them printed in what is known as the Book of Estimates. The Secretary of the Treasury has no power to review the estimates nor can he make or suggest reductions. His relationship to them is mechanical and formal.

The Secretary of the Treasury transmits the Book of Estimates to the House of Representatives. He does not include in it an estimate of the revenues and suggestions for new taxation if necessary. When the estimates

reach the House they are parcelled out to a number of independent appropriating committees. These committees hold hearings on the estimates relating to the particular services over which they have jurisdiction. They call before them the various officers of the government responsible for the preparation of the estimates in the first instance. They are submitted to a rather lively examination the purpose of which is to discover the facts upon which such estimates are based. It is customary at these hearings for a contest to arise between the bureau chief and the committee—the bureau chief, on the one hand, trying to sustain his position in order to secure the amount estimated and the committee, on the other hand, trying to find the weak spots in the position of the bureau chief. The bureau chief has the advantage, in that he alone is in possession of the intimate knowledge of the operations of his bureau upon which knowledge alone a correct basis for an intelligent estimate can be found. It sometimes happens that committees, in utter despair of getting at the real situation, will make arbitrary cuts in the estimates in order to reduce expenditures.

Each of these appropriating committees of the House, after the close of the hearings, reports out one or more appropriation bills; and these, fourteen in number followed by one or more deficiency bills later in the year, make up the sum total of the appropriations out of the public treasury for the annual support of the government. These committees do not consult with each other in the course of their work nor do any of them attempt to gain a view of the finances of the government as a whole. When the House has passed an appropriation bill it goes

to the Senate where the same process is followed as to the hearings and reports.

The defects in this system of finance are readily seen. The observer is struck with the astonishing lack of control both in the executive departments and in Congress. At no stage, from the preparation of the estimates to the final passage of appropriation bills, is there any fixing of definite responsibility or any view of the total demands which are being made upon the national treasury. There is no plan and no real financial policy. No one knows until near or after the close of a session of Congress how much money must be raised in taxation from the people to meet the needs of the government.

WHERE THE FAULT LIES

Who is to blame for this state of affairs? It has become popular of late to criticize Congress for our system of finance. Many writers are indulging in wild statements about the extravagance of Congress and the supposed orgy of "pork-barrel" and "log-rolling" legislation. Some of these writers are even attempting to discredit Congress before the American public. This crusade against Congress is based upon a misconception of the real facts of the situation. Congressmen are not reformers. There are, indeed, always a few reformers in Congress but that is not their business. The American congressman is elected by a local constituency and he is sent to Washington to represent primarily the interests of his district. He is, it is true, a national legislator and the opinion of Congress as a whole will always conform very closely to the public opinion of the American people. But if he fails to represent the local

interests of his district another man will be elected—who will do so.

Congress is to blame for not providing a modern and business-like budget system for the administration of national finance only in the sense that Congress alone can change and correct the existing system,—and who can say that there has been a nation-wide demand for such a reform? Out in the various congressional districts there has not been in the past any considerable agitation over the necessity for a budget system. The demand for action along these lines has come chiefly from academic sources, from writers interested in the science of public finance, and from certain highly organized commercial organizations in the eastern part of the United States.

Furthermore it seems not to be generally understood that Congress, under the present system, is the only branch of the government which has consistently fought for economy in the administration of the government. It has always cut the estimates turned in by the executive branch of the government. There has not been a single year within our recent history in which the appropriations made by Congress were not less by several millions than the executive estimates for the support of the government.

Great emphasis has been laid on the extravagance and wastefulness of Congress through "pork-barrel" and "log-rolling" methods of appropriating money for public buildings and river and harbor improvements. The fact is, that appropriations for these purposes amount to a very small per cent of the total appropriations,—probably not more than 1 or 2 per cent in the past and for the future they will be perhaps less than 1 per cent. But even these appropriations are not made

without official estimates in each case.

Criticisms could be directed at the executive branch of the government with better grace. The executive bureaus are constantly reaching out for more money and sending estimates in to Congress for greater and greater demands upon the public treasury. There has been no really concerted effort on the part of the executive branch for economy in expenditures. It is nobody's business there to take this point of view and the tendency, therefore, of the executive departments is wholly towards greater expansion and greater demands for money.

WAR AND NATIONAL FINANCE

Our entry into the war has completely changed the financial situation. We have emerged from the conflict with a public debt of about \$26,000,000,000 calling for an annual expenditure for interest, of more than \$1,000,000,000. We are further faced with a vastly increased current annual expenditure and it is doubtful if our total appropriations for the support of the government will be less than \$5,000,000,000 for several years to come. This means for the American people a continuation of high taxes in order to furnish the necessary revenue and the continuation to a considerable extent of the high cost of living.

For the first time in our history the people are interested in financial policy and financial reform. There is an increasingly strong demand for economy in financial administration in order to protect the Treasury. The people are realizing as never before that it is they who are supporting the government. The idea of a budget system is beginning to gain wide prevalence. The Sixty-Sixth Congress almost immediately upon convening began to take ac-

tion looking toward the reorganization of our financial system. The House and the Senate each appointed a select committee to devise a budget plan and the plan reported out by the House committee was adopted by the House October 22, 1919. This plan is embodied in the so-called "Good Bill" introduced by Chairman Good in May, 1919. Chairman McCormick of the Senate committee has also introduced into the Senate a budget bill similar to the plan introduced by him into the House in 1918.

PLANS FOR BUDGETARY REFORM

Both of the plans embody the general principles of budgetary reform as advocated by economists and students of finance for many years past. They include the installation of machinery insuring centralization of executive responsibility and control. The President is to submit to Congress at the beginning of each session a national budget which shall contain on the one hand a revised and coördinated statement of the financial needs of the government in the form of estimates of expenditure, and on the other hand an estimate of the revenues of the government with recommendations for new taxation when the estimated revenues appear insufficient to meet the estimated expenditures. The detailed work of the revision and the coördination of the estimates will be done through a budget bureau situated either in the office of the President or in the Treasury Department. This bureau is to have a permanent personnel of highly trained financial experts and economists who will be protected in their positions by the civil service rules.

These plans provide also for an independent audit of the government accounts which is to be accomplished by

consolidating the existing audit forces which are now under the executive and putting them under an independent establishment at whose head shall be a Controller-Auditor General. The purpose of this is to furnish an independent instrument of criticism of the executive expenditures and a report upon them to Congress.

Such in brief, is the kind of budget system which is likely to be adopted in the near future for the federal government. Its beneficial effects can be readily seen. It will abolish nearly all of the vicious practices so loudly complained of at the present time. It would be a step of the greatest importance in the direction of national thrift. The bureau estimates would be scrutinized and controlled at their source. They would be made with reference to the needs of the bureau in its relation to the needs of the government as a whole. When the estimates reached Congress in the form of a business-like financial program,—that is a budget,—they would have already been reduced to the *bona fide* needs of the government. They would not be as now a conglomeration of unrevised departmental requests but would be a scientific presentation of a well thought out plan embodying in one single, simple and intelligible statement the financial policy for which the President is willing to assume responsibility before the American people. The treatment of this budget by Congress in the same centralized way insures here also a definite fixing of responsibility and a unity of legislative action.

The independent audit completes the circle of control by providing a constant and alert critical organization which will report to Congress and to the public any deviation by the executive spending officers from the letter

or the spirit of the appropriation laws.

The taxpayer may rest assured that in the near future there will be in vogue in the federal government a system of financial administration, known as the budget system, which will, as near as system can guarantee that no money shall be taken from the people except that it be to meet a real need of their government. The stream of revenue which must be poured into the national treasury, in many cases at a sacrifice by the taxpayer, for many years to come, will be protected from wild and extravagant demands of over-reaching executive bureaus.

LIMITATIONS OF A BUDGET SYSTEM

No system, however, no matter how well thought out will produce in itself absolutely satisfactory results. It will be necessary for the American people to lend their strong moral support to Congress in the working out of this great reform. They must abandon whatever is left of their local point of view of spending money out of the national treasury. A national financial policy looked at from the point of view of national betterment is possible only through the coöperation of the rank and file of our vast citizenship who control the activities of the membership of the two houses of Congress.

It is not to be expected that a budget system will cause any considerable reduction in the total expenditures of the government. It is not claimed that this reform will bring the amount of appropriations anywhere near to where they were at the outbreak of the war. Expenditures depend upon the policy of the party in control of the government for the time being. If it be one of retrenchment, expenditures naturally would be reduced. If on the other hand it be a policy of ex-

pansion, causing the government to enter into new fields of service they will be proportionately greater.

The budget system as a means of financial administration does not answer the question as to what services the government shall undertake year by year. That is a question of politics and one the decision of which must be made by the people at the polls. An extravagant government in the political sense may be a government which has the approval of the majority of the voters. The only protection from this sort of extravagance is the inevitable criticism which arises from an alert minority, a criticism which if well founded may result in an overthrow of the majority at the next election.

What the budget system is intended to do, whether under a policy of expansion or under a policy of retrenchment, is to guarantee that the estimates presented to Congress are economical and are properly coördinated with each other in their relation to the total proposed expenditure, and further, to the estimated revenue to be raised by taxation. It is possible, therefore, to have sound business-like estimates under what might be regarded as an extravagant financial policy. The budget system has done its part when it has given this protection and when it has presented a picture of the finances as a whole to the people and to Congress each year before any legislative action has been taken.

Capital Needs for Education in the United States

By DAVID SNEDDEN

Teachers College, Columbia University

EACH of the writers invited to contribute to the Academy's volume on Thrift has probably found the difficulties of his task multiplied by the fact that money values, in which we must perforce define our conceptions of expenditures, savings and capital, are themselves now in process of extraordinary flux. This difficulty is especially evident in discussing investments in education where capital needs are increasing almost proportionately with commodity and wage prices while the growth of assessment values, on the basis of which these needs must largely be met, has decidedly lagged. The writer of this paper will therefore ask that his readers always interpret his statements on the assumption that money values as of June 30, 1914, have remained stable. When we shall have gotten over the confusion produced by the war and the darkening of counsels engendered by those bent on exploiting their particular theories of safety and progress we shall doubtless find ourselves able to make increases in teachers' salaries, in valuation of property for assessment, and the like, in such a way as to distinguish intelligently between those adjustments which must be made because of depreciation in nominal money values and those that should represent permanent changes in terms of real values.

The raising of revenues for public purposes has always taxed the ingenuity of governing authorities. The tornadoes of revolution have more often been generated under the atmospheric pressure of excessive or unwise

taxation than from any other cause. When it is recalled that from one-third to three-fifths of all revenues raised by state and local taxation in America goes to the support of public education the problems of taxation and of wise expenditure confronted by our governing authorities on behalf of public schools are evidently far from simple. The conduct of the schools of the people now constitutes by far our largest public enterprise. It is obviously an enterprise in which, unlike roads, or fire protection, or even policing, returns must be taken considerably on faith. Public schools cannot be made self-supporting as can the post-office and water supply systems. Only strong faith in the permanent values of education can sustain a people in taxing itself, and especially its richest and most powerful members, heavily and persistently for the support of schools which are constantly growing more costly.

In estimating the capital needs of education during the next few years several factors require separate consideration: (a) What will be probable increases along lines of educational effort—salaries of teachers, buildings, equipment, longer school year, smaller classes, etc., in elementary and secondary schools and in state colleges and other than special schools—already securely established and progressively developed during the last fifty years? (b) What will be probable expenditures for new types of public education—vocational, physical, continuation—now apparently developing? (c)

What demands for experimental forms of education may be expected? (d) What changes may be expected in the abilities of the states (or the nation participating) to support public education? (e) In what respects are there now preventable wastes in education, or in what respect can we, without increased expenditures, materially improve the ultimate effectiveness of our school offerings?

ANTICIPATIONS SUMMARIZED

We can imagine Uncle Sam as a thrifty *pater-familias* making his decennial budget. "What should the nation plan to spend on its public schools?" His advisers submit observations and recommendations which are first summarized, and then elaborated, as follows:

1. During the last half century the cost of public education has increased faster than either population or taxable valuation, due largely to lengthening of school year, general establishment of free high schools, extending age of required attendance, increasing teachers' salaries, especially in cities, and provision of more expensive supervision.

2. All present tendencies point to the necessity of continued growth in rate of expenditure at least equal to that of recent decades in order to reach adequate minimum standards of effective schooling. This means more particularly: A school year of at least 160 to 180 days in rural districts; a minimum age of compulsory full-time school attendance to the fourteenth birthday: provision of facilities for all persons seeking high school education; more expert supervision; and salary increases sufficient to attract and hold properly qualified teachers.

3. All present tendencies point to the acceptance in the near future by the public of the following as necessary expansions of public education: provision of some facilities for vocational education for all; compulsory continuation school attendance at least to 16 and probably to 18; provision of some form of health supervision for all schools; and provision for some special education of adult immigrants.

4. Certain extensions or modifications of public education are now much discussed, but their probable realization, or, if realized, their probable addition to the cost of education, are still very problematical. The involved problems are indicated by these questions: Is it likely that kindergarten education will be extended? Will junior high school education be considerably more expensive than the grade education it replaces? Will reorganized liberal secondary education prove much more expensive than present high school education? Will the public demand a much longer school year for schools of general education? Must the schools retain a substantial proportion of men teachers? Must the schools seek more expensive service from modern language teachers? Must physical training be provided in cities? Can vocational education be made, in part, self-supporting?

5. Certain redistributions of the burdens of supporting public education may well be expected in the light of present tendencies: (a) Heretofore the major part of the cost of schools has fallen in the primary instance as a tax on property; the present tendency is towards utilization of less direct sources. (b)

The larger political unit, the town rather than the district, the county rather than the town, the state rather than the county, and as a beginning, the nation rather than the state, tends to become the supporting area for a portion of the cost of education; and the contributions of the larger area are so exacted and distributed as to tend to equalize the burden of school support on the one hand and its resulting advantages on the other.

6. Education is still far from being efficient. In many respects its aims are poorly defined, and of course here methods may well be ineffective to the zero point. Even where aims are fairly concrete and demonstrably valid, methods are often bad. Sound principles of public policy clearly point to the desirability of providing at public expense for a substantial amount of research into aims, methods and administration of education as a means of reducing waste and increasing the value of the returns from present and future investments in education.

EXPENDITURES FOR PUBLIC EDUCATION

During the last half century growth of expenditures for public education has been considerably more rapid than growth in population. The statistics of the United States Bureau of Education are confessedly neither complete nor exact as regards the two or three decades following 1870; nevertheless they are sufficiently reliable for purposes of general comparison.

In 1870 there was expended for all public school purposes \$1.64 per capita of population; in 1915 the amount was about \$6.03. In 1870 the amount spent per pupil in average attendance

was \$15.55; in 1915, it was \$40.43.

During this half century the ratio of children of school age (5 to 17 years inclusive) has fallen from 31 per cent to 26 per cent of the total population, due in part to diminishing birth-rate and in part to greater longevity of an increasingly healthy people. This decrease in a sense tends to lessen the burden of supporting schools; but this is far more than offset by the lengthening of the school year, the operation of compulsory attendance laws, and the desire of constantly increasing numbers to seek upper grade and high school education. In 1870 57 per cent of persons 5 to 17 years of age were enrolled in public schools; in 1915 nearly 75 per cent. In 1870 the average length of the school term was 132 days and the average number of days attendance made by each enrolled pupil was 78; in 1915 these figures were 159 and 121 respectively.

Some other figures are worthy of attention as showing progress of schools and school expenditure. In 1870, 38 per cent of all teachers were men; in 1915 men constituted less than 20 per cent in spite of the growth of high schools. In 1870 the average monthly salaries of all teachers was just under \$29; in 1915 it was slightly over \$68. Since 1870 the value of all school property has increased more than ten fold—from \$130,000,000 to \$1,567,000,000.

None of these figures can be considered exact, owing to the necessarily imperfect methods of reporting used by the states; nevertheless they are sufficiently accurate to present a fair exhibit of the evolution of the measurable aspects of public education during the last half century. Faults of interpretation are, of course, easily possible. Perhaps the best single measure of

educational expenditures is suggested by the fact that whereas in 1870 the amounts expended per day for each pupil enrolled are computed at 7 and 12 cents respectively for salaries and for all expenses; in 1915 these amounts were 14 and 25 cents.

Viewed in the aggregate, expenditures for public education seem large. But when set in comparison with other less useful forms of expenditure they seem far from striking. The American people now spend upon each of two items—tobacco, and display advertising—sums considerably in excess of all outlays for public education. In years just passed they spent on alcoholic beverages at least twice and, were proper methods of computation employed, probably three times what was spent for education from the kindergarten through the university.

ACHIEVEMENTS IN PUBLIC EDUCATION

Space is not here available for an enumeration of our achievements to date in public education. Considered from the standpoint of the ideals of those zealous for the progress of education these achievements are disappointing enough; but viewed historically and comparatively they justify sincere admiration. Free elementary schools are now practically available to all the people; and as respects free and accessible high school education, America surpasses all other countries. State universities, agricultural colleges and higher technical schools are widely available and generously supported. Nearly all states have free schools, often including free boarding accommodations, for the deaf, blind, and semi-delinquent. The length of school year has reached a satisfactory optimum in most cities. The teaching force of the United States is

composed usually of persons of good native abilities and social endowments. Except in rural districts, school building has made great advances in the last three decades. Most of the states now provide text books and other working facilities to pupils. Compulsory school attendance laws are nearly universal and the minimum age at which cessation of education is permitted steadily rises towards fourteen in all states, while in some that goal has been passed.

It has already been noted that the cost of public education has been increasing faster than population and taxable valuation during the last fifty years. There can be no doubt that such rate of increase in terms of real values will continue for many years to come unless the nation should be overtaken by economic catastrophe. All indications are that the people will create the demands. The number of days of school session will be increased in rural schools; the proportion of teachers with professional training will be steadily greater; teachers of inferior personal qualities or training will less frequently be employed; salaries (always speaking in terms of real values) will be raised somewhat, as a means of attracting teachers of superior native fitness and equipment; buildings and teaching facilities will be somewhat better; and in some city schools, at any rate, size of classes will be perceptibly diminished.

Many campaigns are now under way looking to increasing salaries. Most of these have been undertaken, primarily, of course, to aid teachers in keeping their nominal salaries somewhat correlated with rising prices. But in a degree these campaigns represent something more fundamental. In educationally progressive communities, school boards, executives, and ex-

perienced teachers, as well as no inconsiderable part of the public, realize that if the general level of teaching is to be raised, better compensation must be offered as a means of attracting and retaining the kinds of service capable of giving improved service.

In many particulars, standards of public education are yet far below what will be demanded when public opinion becomes better informed. Our rural schools in general now assure literacy, but not enough beyond. Curricula of high schools and upper grades are still without valid objectives. Classes in city schools are often excessively large. Nowhere is there adequate provision for experimental work looking to the scientific improvement of aims, methods, and administration of education.

In terms of money values of 1914 it is safe to predict that expenditures on public education will so rise during the next decade that by 1930 we shall be spending \$10 annually per capita of population on the kinds of schooling already generally established, and excluding possible developments into new fields hereafter to be considered.

PROBABLE EXPANSIONS OF PUBLIC EDUCATION

1. *Vocational Education.*—The most absorbing and significant movement in educational thought and practice during the last decade has centered in vocational education. There exists a rapidly growing conviction that facilities for vocational education ought to be available for all; but beyond this, public opinion has not yet gone. Educators themselves are by no means agreed as to what constitutes effective vocational education. But the best informed students are probably agreed on the following conclusions:

a. All adults during all historic times have followed vocations. Since instincts and childish imitation give only meagre preparation towards meeting the requirements of all but a few primitive forms of production, it follows that all adults have at some time and place been *trained, developed* or *educated* (in the broadest sense of the term) for the exercise of one or more vocations. But such vocational education may be the direct and systematized training of a vocational school, or the systematized by-education of organized apprenticeship, or the "pick-up" education of actual participation in first, simple and then more complex phases of the work itself. Now the essence of the "current" movement for the development of vocational schools reflects in reality a social conviction that systematized and effective vocational training should be substituted for the unsystematic and wasteful vocational education which has been the best available for about 90 per cent of all workers.

b. Apprenticeship vocational education is now available for only a small per cent—probably less than 8—of all workers; and its inherent characteristics are such that it may be expected in the future, as it has for many years in the past, to decline in effectiveness.

c. For the large majority of vocations as now developed and specialized, vocational education cannot all be given in some pre-working stage, as is now largely the case with professional education; nor can it consist chiefly, or even largely, of more or less abstract studies of the technical phases of such vocations; nor need it necessarily require extended time at any one stage.

It is difficult, therefore, as yet to estimate the probable cost of an adequate system of vocational education. Between the ages of 15 and 25 we can assume that there are in the United States 2,000,000 persons in each year group, all of whom at some time, or at different times, should be given opportunity for vocational education. Good vocational training for reasons that need not be detailed here is more expensive per pupil per hour than other forms, ranging from 50 cents per student-hour for medicine and engineering to 20 cents per student-hour for the trades, and reaching as low as 10 cents in certain commercial and industrial vocations. Some forms of vocational education can be made partially self-supporting. Nursing education is that now. The best forms of secondary agricultural education can meet one half their total cost. Upgrading industrial education rapidly approximates a condition of self-support as respects all but instruction and overhead charges.

For the next ten years, taking the American people as a whole, it is certain that the investment of \$50 on each of the 2,000,000 persons referred to above, somewhere, or at different intervals, between the ages of 15 and 25, or a total annual expenditure of \$100,000,000, would give splendid returns in the increased economic productiveness, as well as the incidental good citizenship, of the entire people.

2. *Compulsory Continuation Schools.*—The war has given a great impetus to the enactment of legislation providing for compulsory continuation schools. For a number of years before 1914 American educators had been convinced that one of the most successful features of German education was its continuation schools; and a few pro-

gressive states had begun experimental work in their establishments. Present indications are that all states not primarily agricultural will require continuation school attendance to 16 or 18 within a very few years. It is safe to predict that such attendance will affect at least 1,000,000 children of each year age group, or a total of from 2,000,000 to 4,000,000. Adequate schooling for these on the basis of a minimum attendance of four hours per week can hardly be expected to cost less than \$8 annually or a total of from \$20,000,000 to \$30,000,000.

3. *Physical Education.*—It is now generally agreed by all students of education that a school of any type offers an excellent center for health oversight of a public nature. Already it is generally required that instruction in hygiene and sanitation shall form a part of the offerings of all public schools. It is believed by many experts that, given needed facilities and instructors, important results could be accomplished in physical training in most types of schools. Much experimental work in the general field of physical education is now under way, and in spite of the vagueness of many of the objectives proposed, it seems very probable that within ten years all progressive states in the Union will be expending from two to five dollars annually, in addition to present outlays, on the medical inspection and physical education of each child in the public school—or in round numbers if all the states were equally progressive, \$100,000,000.

4. *Education for Adult Immigrants.*—For many years prior to the war America freely received and even welcomed millions of immigrants from Europe and elsewhere. Recently these have come chiefly from countries very

different from our own in language, customs, and political traditions. The test of a national crisis showed that some of these had become well-disposed and useful Americans while others had not. Public opinion is now such that if extensive immigration hereafter takes place, an extensive program of special education for the more mature immigrants must be provided. There is now before Congress a measure providing for a nationally supervised and aided program of special education for illiterate and imperfectly educated adult aliens now here. This bill is based on the assumption that a comprehensive program of such education would now cost the nation and the states together approximately \$25,000,000 per year. The future costs of work of this character will obviously depend upon the extent to which immigration is permitted. If work of a thorough-going quality is to be undertaken it is a fair guess that at least \$100, distributed over several years, would be required properly to "Americanize" each person over 14 years of age coming to the United States from a non-English speaking region.

UNSETTLED PROBLEMS

These are a number of unsettled problems in American education, the solutions of which will probably materially affect educational expenditures during the next twenty years, but the actual results of which can only be guessed at as yet.

1. *Kindergartens*.—The actual functions performed or capable of being performed by the kindergarten for children normally circumstanced is yet very uncertain. Children from poor home and street environments clearly derive much gain even from a meagre 600 hours of schooling per year out

of their more than 4,000 waking and playing hours. But there are nearly 6,000,000 children in the United States between 4 and 6 years of age. To provide kindergarten education for all these will cost at least \$200,000,000 per year. Of these 6,000,000, two-thirds, certainly, are being reared in normal environments, judged by reasonable historic standards. Is the kindergarten urgently needed for them? An influential body of fine sentiment today answers, yes! But it is certain that much study must yet be given to the possible functions and actual achievements of the kindergarten in contributing to real educational values before educational authorities can reach dependable decisions.

2. *Administration of Secondary Schools*.—There is rapidly taking place a readjustment of the administrative organization of schools for children from 12 to 14 or 15 years of age. This is primarily a movement to render education for these ages more efficient. Whether the reorganized schools will cost a great deal more than the present upper grade and first year high school work is difficult to guess. Certainly it will not cost less.

3. *Reorganization of High School Courses*.—Far reaching attempts are also being made to so reorganize high school courses and methods that the resulting education shall be more genuinely "functional" as liberal education. Neither of these movements specially contemplates reduction in size of classes or increases in salaries of teachers. The junior high school will manifestly require equipment more expensive than that now provided for the upper grades. Probably in all cases some increase in expenditure will be necessary to realize the objectives desired.

4. *To what extent will men teachers be required in the schools of the future?*—

Not only in America but elsewhere men have been steadily disappearing from elementary schools, and the proportion of men teachers in secondary education is diminishing wherever co-education prevails and professional standards are rising. The fundamental cause for this of course is that men and women cannot compete on equal economic terms in teaching or in any other calling. The "modal" groups of men teachers consist normally of those who, in the expectation of society, are supporting, or are preparing to support, families. These constitute the "dominant" economic demand for compensation which if it is not met in teaching, will be sought elsewhere. But the modal group of women teachers consist of celibates who only occasionally have responsibilities for the support of others than themselves. Their dominant economic demands are, therefore, much less than those of men. These conditions develop, of course, in largest measure among teachers over twenty-five years of age. Under twenty-five the relative demands of men and women are not so dissimilar. This situation is, of course, complicated by some special conditions. Where men teachers past the usual age of marriage work side by side on equal terms with women, the men are apt to be of inferior ability and personality to the women, for the reason that teaching ranks for man as a twentieth or thirtieth in the order of best vocations, whereas for women it is often, apart from marriage, the first, or, even in large cities, the second or third best. Now if women teachers of given native abilities, training and maturity can do certain kinds of teaching apparently as well as men, school authorities must

employ them since their services can be procured at much lower cost.

A similar problem appears in the case of young versus elderly women teachers. A very large proportion—always over 60, and often 80 per cent—of all women who enter teaching remain only from two to five years, after which they marry. Hence in rural areas often 80 per cent of all teachers are in effect girls giving service only during their pre-marriage years; while in cities at least half are frequently of that class. But these young women teachers make only low economic demands—in this respect being little different from young farmers, clerks and even engineers and lawyers. They are anxious for experience; they are little concerned with saving for the future; they are inexperienced in bargaining; and often they live at home all, or part, of the year. But women over thirty who expect to remain permanently as teachers must save for sickness or old age. They cannot usually live at home. They are, therefore, at a perpetual disadvantage in competing with the "dominant" mass of young teachers. Their compensation under the operation of the law of supply and demand tends to be kept down to that of the beginners—that is, unless it is evident that they can render a kind of service that these younger persons cannot offer.

Now we possess no satisfactory knowledge as yet of the places and conditions which require the more expensive of men as against women, or of mature, as against young, women. Women teachers are entirely right in demanding "equal pay for equal work." School authorities are entirely right in procuring service from those who, *in the long run*, will give it for least compensation. On the other

hand, if in a given position a man of equal native and acquired powers to a woman, can, by virtue of his "masculinity," render a grade or kind of valuable service which she cannot, then of course school authorities must have his services even if he holds out for a salary that will enable him to support two adults and three children. It is almost useless to discuss these vexed questions without particularizing. Always assuming equal native powers, training, and maturity, can a man do better or worse work than a woman in teaching a kindergarten? In directing high school athletics? In teaching high school girls singing? In teaching woodwork to boys of fifteen? In teaching all subjects to fourth grade children? In teaching citizenship to boys of sixteen? In teaching the carpenter's trade to boys of seventeen?

Similar problems appear in connection with mature and young women teachers. Assuming equal native abilities and initial professional training, how much superior as a teacher for a third grade of forty pupils in a suburban community is a woman of forty over a woman of twenty-two? In general do young women of twenty to twenty-five succeed well as teachers of seventh grade and eighth grades as now organized? Are young women just out of college acceptable teachers of high school subjects? Do we find special types of simple work for the younger teachers?

Now it ought to be obvious that if, for particular types of schools or courses of instruction men teachers, the mature as well as the immature, are essential, that these will have to be paid substantially larger salaries than celibate women of the same age, general ability and professional preparation. Otherwise these men will seek

employment in fields which will permit them to rear their families appropriate to the ideals and standards of a people not committed to the practice of "race suicide."

5. *Cost of Physical Education.*—Reference has already been made to current discussion of the need and feasibility of physical training as a distinct phase of physical education. If it should prove expedient to embark upon expensive schemes of physical training, the largest expenditures will doubtless first be required for city children. The probable cost of such work is still wholly problematical.

6. *Financing Vocational Education.*—There are those who believe that good vocational education can be made partly self-supporting. Properly organized and conducted vocational schools can undoubtedly turn out a large amount of productive and even marketable work. But it is the present writer's conviction that it will prove much more in accordance with sound public policy to apply the net returns obtained for such product to a payment of a partial wage for the learners than towards the support of their schools. The psychological and social reasons for such action in terms of creation of incentives promoting right standards of workmanship and the like can readily be understood.

THE SUPPORT OF PUBLIC EDUCATION

The economic production and accumulation of wealth from which must be taken by taxation the means of supporting public education have been increasing considerably more rapidly than population during the last half century. In spite of the absorption of free lands we have no reason to infer that the same proportion of increase

will not take place during the next few decades, even taking account of the destruction of wealth occasioned by the war. Demands for good education and abilities to support it easily, probably increase at faster ratios than per capita incomes or accumulations subject to taxations, notwithstanding the competition of spending for more visible and immediate gratifications. But the effect of changes in the distribution of either larger incomes or accumulations—towards concentration in a few hands or distribution among many—on the ease with which public revenues can be increased seems yet a very obscure subject in the literature of taxation.

Two tendencies towards equalizing among all the members of state and nation the burdens of supporting public education and which have been moderately operative in the past may have accelerated development in the near future. The first of these is an enlargement of the area of taxation. Historically each family paid for the education of its own children; then the property holders, with or without children, were taxed to educate the children of the community; later, the proceeds of county or state taxation are used to supplement local effort; and now we are considering insistent proposals that the nation shall contribute. It is realized that local communities, rich in children and poor in taxable resources, have already often reached reasonable limits in their efforts to support schools.

The second tendency is towards the discovery of taxable values other than real property. Already in many places the limits of desirable taxation of real property have been reached. Franchises, incomes, and other values will increasingly come in for taxation even

within states and municipalities. If the national government is directed to contribute to the support of schools its revenues for this purpose will, of course, be derived exclusively from other than taxation of real estate.

PREVENTION OF WASTE

There are many kinds of waste in current education and these have various sources. Fundamentally the largest of these today is found in the misdirection of teaching effort, a condition for which teachers individually are only slightly responsible. In our schools, and especially in those for children from 12 to 18 years of age, the actual values of the objectives now defined are much more matters of belief and faith than of knowledge. We spend annually, for example, from \$7,000,000 to \$10,000,000 a year in teaching French and German in high schools. The methods employed are not always good; but a far greater source of wasted effort is found in the fact that there exist no clear cut objectives of modern language instruction. We allow or even encourage superficiality in the learning of these languages. Nowhere is it clearly indicated whether the practicable goal held in view is a reading knowledge, a speaking knowledge or a writing knowledge or merely an almost wholly inserviceable combination of all three. A more thoroughgoing knowledge than we now possess of the educational needs of American society would probably show the wisdom of investing even more money than we now spend on modern language instruction; but it should be spent in adequately training a relatively small number of persons so that the nation would be assured of a reasonable diffusion of interpreters (in the cultural and social sense) of

French, Japanese, German, Spanish, and Russian literatures, history and current thought.

We spend many millions annually in teaching algebra and geometry to girls and boys who will never make any genuine application of the results of their efforts. It would certainly be worth while for Americans to spend heavily for the teaching of citizenship; but it is very doubtful whether the history studies now taught in elementary and high schools "function" perceptibly in good citizenship. Without doubt a large part of the money we now spend on the teaching of manual training, music, English language, and science is as completely wasted as was the money spent for medicine and expert healing service in the dark ages, medically speaking, of the eighteenth and previous centuries. As regards objectives, most education is today not farther advanced than was medicine in 1850, agriculture in 1830 or chemical industry in 1800.

But teachers and other educators are only partially responsible for this apparent "backwardness" of education (it is not, of course, a real lagging, since the sciences on which education must eventually rest are only now in process of development). Society has not collectively reached the point where it is ready to devote to scientific study and research the means necessary to define the objectives and improve the methods of education. Money spent in rightly directed research in education would even now be abundantly repaid in increased economy and efficiency.

In some of the literature of propaganda recently widely distributed there are manifested tendencies to demand increased expenditures for education in a spirit that is the reverse of

"thrifty." Millions are asked, not for research into the possibilities of "physical training" but for the support of physical training itself, notwithstanding that even those who have given the subject fullest consideration can as yet offer us only a host of aspirations and beliefs as to what such training should be designed to accomplish. It is insistently urged that teachers' salaries should be greatly advanced, and reckless and superficial comparisons of teachers' salaries are made with those of other workers, quite regardless of age, sex, family and other economic conditions which play so large a part in determining the operations of the law of supply and demand. No convincing evaluations have yet been made of the kinds and degrees of service that are now given or may, under slightly changed conditions, be reasonably expected from that host upon whom we now so largely rely for teaching service—namely, our brightest and best young womanhood, giving a few youthful, pre-marriage years to teaching. Propagandists, ignoring questions of varying optimum standards of teaching service for children of 6 to 10 as against those of 16 to 18, or of the teaching of geography as against the teaching of French, claim that we must pay much more in the future than in the past for all kinds of teaching service. Possibly; but the public will increasingly want to be shown that educational leaders have fairly clear ideas of their specific objectives and that they have carefully studied the most effective as well as the most economical means of realizing them. Young workers, 18 to 25 years of age, can produce much valuable service in this world. Perhaps they can long continue to do so in certain fields of teaching, but not in all. If so,

we must discover their places of maximum usefulness and the character and amounts of the training necessary to produce, not ideal, but "optimum" service.

Now that public education has become so gigantic a public enterprise

the demands of economy no less than those of efficiency demand, on the part of a people devoted to right ideals of "thrift," that scientific studies of its best objectives and methods and of its needed personnel should be extensively supported and promoted.

An Analysis of the Need of Capital for Transportation in the United States

By HOLCOMBE PARKES

Associate Editor, *Railway Age*

THE American railway plant needs at least \$3,500,000,000 of capital investment today. Within the next three years it will need at least \$6,000,000,000 and perhaps \$7,000,000,000; it needs this amount to enable it to handle the traffic now offered for transportation and the additional traffic that will be offered within the next three years. It needs it to give service commensurate with its place in our national life. It must have it if this nation is to weather the reconstruction period and prosper.

There has been an insistent cry lately for greater and greater production as an antidote for the poison of the bolshevistic doctrines which have permeated organized labor's ranks. In theory greater production—by means of which we may be able to return once more to the unhampered development of our industries—may be successful. But in practice greater production, to such an extent as would be necessary to lead labor back to the "honest day's work for an honest day's pay" basis, would more than likely result in national disaster—if our transportation facilities, inadequate for our present rate of production, are not largely developed. In other words, greater production without still greater development of our transportation plant is impracticable.

These estimates are perhaps appalling to the layman. Whatever the reaction, a few hours of delving into railway statistics, will convince even the most skeptical that, based upon

past records of service rendered by given facilities, they are really the minimum. As a matter of fact, no one can state within many millions the need of the railroads for capital. In testifying before the House Committee on Interstate and Foreign Commerce recently, Alba B. Johnson, president of the Railway Business Association, representing between 2,000 and 3,000 railway supply companies, said:

So far as we are aware, nobody has estimated for you the magnitude of the improvement to existing lines which the public interest requires to be made within any specified period in the future. If you were in possession of such estimates, who shall say how far short they would fall of the needs which may actually become manifest? Even if you had the power of divination to make approximate guesses at the requirements expressed in physical units and in units of work performed, what human agency can be brought to bear in the year of grace 1919 to compute the cost of carrying out such projects? Nobody knows what labor and materials will cost. How, then, can anybody predict within many millions a year how much capital would have to be raised to carry out projects approved?

THE INADEQUACY OF TRANSPORTATION TODAY

It is unquestionably true that our present transportation system is inadequate. Its inadequacy is well known to the public because of the projection of the railroad problem into the arena of common topics. The consequent question that naturally arises in the minds of those upon whom this inadequacy has been impressed is, "Why have our railroads been allowed

to so deteriorate?" And the question remains unanswered unless the interrogator has the patience to review years and years of statistical reports throughout which the intensifying of regulation, the growing inefficiency of labor, rising costs of both material and labor and other similar conditions are so intermingled that condensation is practically impossible. However, the one man in the United States, who, because of his position and because of his access to all of the facts, should be able to present a brief answer recently attempted to do so. Walker D. Hines, Director General of Railroads, in a recent address said:

In the year or two preceding federal control of the railroads, the normal additions to cars and other transportation facilities were not made because prices were very high, labor was scarce and financing on the part of the railroad companies was unusually difficult. During the first year of government control there was a severe limitation on the amount of material that could be taken from other war purposes to use for providing additional railroad facilities. When the year 1919 began we were being confronted with a new difficulty in the way of adding to the facilities, and that was that federal control naturally was approaching its end from the time the armistice was signed. More than that the failure of the appropriation on the 4th of March last, which had been sought by the Railroad Administration to enable it to meet its obligations already incurred, postponed the construction of even the 100,000 cars that had been ordered, because they could not be paid for, and the equipment companies naturally had to slow down on their production. The railway companies were unwilling to furnish money for new equipment because of uncertainty as to their own future, so the result has been that the Railroad Administration since the year of 1919 has not been in a position to provide any additional facilities except those which were needed, as an emergency measure, unless the railroad companies were willing to furnish the money, and the result is that at the present time the Railroad Administration has been unable to order or obtain authority to order any cars in addition to the 100,000 that were ordered last year.

So that that inadequacy of facilities, which were inadequate before federal control began, and which have become increasingly inadequate since that time, principally accounts for the fact that the facilities now are not sufficient to handle all of the enormous business which is offered to the railroads of the country.

TRANSPORTATION REQUIREMENTS OF THE FUTURE

So much for the fundamental causes of the present inadequacy of railroad facilities. What of the future? The cry for greater and greater production will undoubtedly be answered. As a matter of fact it has already caused enormous advances in the tonnage of commodities of every description offered to the railroads for movement. The result will be that the public interest will require that certain standards of service, of maintenance and of development be adhered to. It is safe to assume that these standards will be higher than those maintained before our unfortunate experience in government control and certainly much higher than those maintained during the past two years. The absolute minimum capital investment that will be required in the public interest, therefore, will be that sum which will place the railroads of the country in a position to fill successfully the nation's present transportation requirements plus whatever capital is necessary to provide facilities for handling any future increases in production. Computed from this viewpoint and on the basis of the past annual developments in relation to the service rendered, it is possible to arrive at a figure which may be said to be the minimum amount of new capital required by the railroads. There are several means of arriving at such an estimate. It may be estimated (1) on the basis of the increases which have occurred during normal periods, in the capital investment and in the

amount of traffic handled, and (2) by finding the deviation, during the period of government control, from averages established for capital expenditures for certain purposes during normal periods, to which must be added the approximate capital required to maintain the averages during the coming year and to provide the additional facilities necessary to give adequate service for increased traffic.

THE DEFICIT IN CAPITAL INVESTMENT AS COMPARED WITH TRAFFIC INCREASES

Mr. Hines, in outlining the causes of the inadequacy of service at the present time, said: "In the year or two before this country entered the war, the railway companies were unable materially to increase their facilities because of the difficulty of raising new capital." The intimation is, of course, that the trouble began in 1915. During the ten years, prior to this time, or from June 30, 1905 to June 30, 1915, freight tonnage (ton-miles) increased 61 per cent and passenger traffic (passenger-miles) increased 36 per cent. During the same period the investment made in new facilities was \$5,300,000,000 or 44 per cent. Since June 30, 1915, the increase in freight traffic has been approximately 57 per cent and the increase in passenger traffic 32 per cent and the new investment in facilities but \$1,900,000,000. The discrepancy during the past four and a half years can easily be seen. If the investment during this latter period had been as great *in proportion to the increase in traffic* as it was during this ten-year period, it would have been approximately \$5,000,000,000. These figures, however, are based upon the purchasing power of a dollar between 1905 and 1915. Since that period this purchas-

ing power has been greatly diminished. The 1905-1915 dollar during the 1915-1919 period had but approximately two-thirds of its former value. Equated on this basis the investment during the last four and a half years has been but \$1,300,000,000. Taking this last figure as the actual investment during this period, it will be seen that capital investment in railways has fallen behind approximately \$3,700,000,000 in four and a half years. At the present time, however, the purchasing power of the dollar has been still further diminished and we now find that it requires two dollars of capital investment to accomplish the same results that one dollar accomplished during the period from 1905 to 1915. If this deficiency in capital investment is to be made up now, and on the basis of the purchasing power of a dollar in 1919 or 1920, it will be found that it will take twice as much money, or \$7,000,000,000 to make up the deficiency in railroad investment which has been allowed to accrue since 1915.

The statement has already been made, however, that it would require \$3,500,000,000 rather than \$7,000,000,000 to enable the railroads to provide adequate transportation facilities today. Substantial progress has been made during this four and a half year period, especially in 1916 and 1917, in increasing the efficiency of the present transportation plant. Car loading has been greatly increased, economies have been effected in the operation of cars and, since the Railroads' War Board was organized in 1917, facilities have been pooled and certain advantages accruing from unified control have been utilized. For this reason it is probable that the estimate of \$7,000,000,000 is somewhat exaggerated. In order to be

certain that this development of efficiency is recognized, one half of this amount of \$7,000,000,000 or \$3,500,000,000 has been taken as representing the existing deficiency of investment.

This compilation brings us up to the present year. Any estimate at the present time as to the capital needs of railways during the year 1920 will in all probability be greatly in error for the reason that it is practically impossible to foretell what the condition of industry generally will be and how far reaching will be the effects of the cry for greater production. As already indicated the average annual capital investment during the years from 1905 to 1915 was approximately \$530,000,000. Equating this sum on the basis of the present purchasing power of a dollar it will be seen that it would require at least \$1,000,000,000 a year to provide the same amount of facilities during future years as were provided on an average during each year of this ten-year period. Were the existing deficiency of facilities to be made up during the next three years and in addition the normal growth of traffic during these three years provided for, the total investment in these years would be from \$6,000,000,000 to \$7,000,000,000. This estimate is based on the assumption that traffic will not increase more rapidly than it did during the period from 1905 to 1915.

DEVELOPMENT OF CERTAIN TRANSPORTATION FACILITIES

To substantiate the estimate already made and to indicate why and where certain capital expenditures are required, it might be well to investigate briefly the relation of the development of certain transportation facilities during normal periods of years and during the past four abnormal years.

The four items for which a large portion of capital expenditures are made are: mileage, freight cars, passenger cars and locomotives. Briefly the increase in the railroad mileage of the United States between 1905 and 1915 was approximately 40,000 miles or an average of 4,000 miles per year. Contrasted with this is the fact that during the past four years there has been practically no increase in mileage at all. It is true that during these four years, certain new mileage has been built, but the miles of road abandoned or torn up during that period have fully equalled the total number of new miles. If the average number of new miles had been constructed during each one of these four years we would have at the present time approximately 16,000 additional miles of line.

Insofar as freight cars are concerned, there has been an increase in their number in service of only 5 per cent during the last four and a half years as compared with an increase in the freight traffic of 57 per cent in the same period. Contrast this increase in traffic and the number of freight cars in service with the records established for the ten years ending with 1915 and the deficit is only too apparent. During this latter period the freight traffic of the country increased 61 per cent and the number of freight cars in service increased 36 per cent. The average cost of a freight car today is \$3,000, and the present deficiency of freight cars is at least 300,000.

Practically the same conditions prevail in the matter of passenger cars. Between 1905 and 1915 the passenger traffic was increased 45 per cent and the number of passenger cars in service 36 per cent. Since that time the increase in passenger business has been approximately 32 per cent and there

has been practically no increase in the number of passenger cars. The deficiency in the number of passenger cars must be 10,000, and the average cost per car now is approximately \$30,000.

In the matter of locomotives similar conditions prevail. In the period from 1905 to 1915 the number of locomotives in service was increased approximately 30 per cent. Since that time, and in spite of the enormous increase in traffic, there has been practically no increase in the number of locomotives. A locomotive today may be said to cost \$50,000; and if we take the conservative view that only 10 per cent more locomotives are needed, this means a deficiency in locomotives of about 7,000.

To make any comprehensive estimate, it is necessary to compute not only the capital requirements for these four items, but also for a large number of other as important or even more important items, such as sidings, yards, shops, stations, etc.

THE FIELD FOR CAPITAL INVESTMENT

It is not possible to discuss the necessity for the investment of capital in transportation without taking cognizance of the chances of this investment actually being made in the future. Whether it will be made or not depends a great deal upon the provisions of such legislation as will be passed by Congress. At the present time the Cummins Bill prepared by Senator Cummins, chairman of the Senate Committee on Interstate Commerce, appears to be receiving the earnest consideration of law makers at Washington as the basis of whatever legislation may be framed. Insofar as its relation to the investment of capital in transportation is concerned, the bill

provides that the Interstate Commerce Commission shall permit rates sufficient to produce a net annual operating revenue of $5\frac{1}{2}$ per cent figured on the basis of the property of the railroads of each territorial group as valued by the commission. An additional $\frac{1}{2}$ per cent may, in the discretion of the commission, be permitted to be earned and invested in unproductive improvements. The vital question that this provision raises is: Will capital flow into this field of investment under these conditions in sufficient quantity to gradually eliminate this deficit in development which has accrued since 1915 and provide an adequate system of transportation for the country in view of the greatly increased traffic which will undoubtedly be offered?

Certain interests claim that such a provision will enable the more prosperous roads to earn from 6 to 15 per cent while the less prosperous roads will be protected by a minimum return of $5\frac{1}{2}$ per cent. The provision states, however, that if a railroad receives an income of over 6 per cent, allowing $\frac{1}{2}$ per cent to be turned to unproductive improvements, the excess is to be divided between a reserve fund and a general railroad contingent fund. Therefore, other interests maintain that this division of so-called "excess earnings" will result in practical financial starvation. The result has been that there has been much opposition to this portion of the measure and it is not improbable that it will be greatly modified, especially in view of the necessity for capital investment to again bring our transportation system to something approaching a state of adequacy. Fortunately this phase of the bill will not be foreclosed by favorable action upon the part of Congress. The rate

of return can be changed if experience proves that it is inadequate to attract the necessary capital.

Increased production has been urged as the means of successfully combating industrial unrest. To make this movement successful there must be a still greater simultaneous development of

transportation facilities. To provide for this greater development of transportation facilities enormous sums must be invested in our transportation plant. It rests upon Congress to pass such legislation as will attract capital into this particular field of investment.

American Farmers' Need for Capital

By EDWARD H. THOMSON

President of the Federal Land Bank, Springfield, Mass.

THE American farmer is too generally thought of wholly as a laborer. He is both a laborer and a capitalist. The returns from capital invested in the farm business are nearly equal to those from his labor. The average investment per farm according to the 1910 Census is \$6,444 which, if considered on the basis of 5 per cent, would yield an income of \$322. Investigations by the several State Agricultural Colleges and by the U. S. Department of Agriculture have shown that the average annual labor income derived by the farmer is from \$300 to \$500 depending upon the region and the general conditions covering the particular area. In addition to this the farmer has the use of the farm house to live in and those products which the farm furnishes towards his family living. The needs of the American farmer in the way of capital have never been adequately understood and in most cases he has been left to get along with what money he could secure either by unfavorable terms on mortgages, or by paying high interest rates on short term loans.

CAPITAL INVESTED IN AMERICAN FARMS

Table I shows the total value of farm property in the United States in 1910 and its distribution in the way of land, buildings, equipment, and live stock. The increase in amount from 1900 to 1910 is 100.5 per cent, the increase varying from 118.1 per cent in land to 60.1 per cent in live stock.

The forthcoming Census will undoubtedly show a still greater increase in all forms of farm property. It would not be surprising if the total reached \$100,000,000,000 in farm property in the United States in 1920, a certain percentage of which would be due to inflated or depreciated currency values existing at this time and the consequent inflation in land values in some parts of the country.

The manner in which the farmer has his capital invested varies according to the kind of farming and the land values prevailing in a particular region. For instance in the central or corn belt states where corn, small grain, and hay are the prevailing crops, and where live

TABLE I
Value of Farm Property in the U. S. (1910 Census)

Value of Farm Property in U. S. in 1910	Per cent of total value represented by	Aver. value per farm
Land..... \$28,475,674,169	69.5	\$4,476
Buildings..... 6,325,451,528	15.4	994
Implements and Machinery ... 1,265,149,783	3.1	199
Domestic Animals..... 4,925,173,610	12.0	774
\$40,991,449,090	100.0	\$6,444

stock forms only a small part of the business, fully 90 per cent of the total investment is represented by land and buildings, and the balance in equipment, live stock, and supplies. In some of the eastern states, particularly in the grazing areas where land values per acre are comparatively low and where the major business is dairying, not over 60 per cent to 65 per cent of the total investment would be represented by land and buildings while possibly 20 per cent would be represented by live stock. Thus the amount of money in proportion to the total investment that a farmer might borrow on the security of his real estate would vary somewhat according to the region and type of farming followed.

RELATION OF FARM CAPITAL TO INCOME

There is a distinct relation between the amount of capital invested in the farm business and the income received by the farmer. This means that the size of the business has a direct relation to the income. Data given

TABLE II

Capital Related to Labor Income—Farms Operated by Owners—Northern Livingston County, N. Y.

Capital	No. of Farms	Aver. Labor Income
5000 and less	87	\$291
5001-7500	80	407
7501-10000	112	480
10001-15000	164	769
15001-20000	62	1001
20001-30000	55	1062
Over 30000	18	1691

in Table II as shown by Warren in *Farm Management* are for a district in northern Livingston County, New York. It is noted that the average labor income on 87 farms with \$5,000

capital or less is \$291, whereas the average income of 62 farms with \$15,000 to \$20,000 capital is \$1,001. By labor income is meant the sum received by the farmer after the farm expenses have been paid and after deducting 5 per cent interest on the capital invested. In addition to this he had the use of the farm house and such products as are furnished by the farm. Similar investigations made in the corn belt and the cotton belt indicate the same relation. This is to be expected, for much greater economies of production through more efficient use of men, teams, and machinery are obtained on the larger farms, resulting in greater returns to the farmer for his supervision and labor. Such data indicate the desirability of a farmer having adequate capital commensurate with his ability as a manager. In very few instances do we find a farmer, even of unusual ability, able to make a substantial income through the efforts of labor alone. The small farm intensively cultivated is desirable where labor is cheap and where markets for such products are near at hand.

The typical American farm is developed on the basis of product per man rather than product per acre, a basis wholly unlike the agriculture of the European and Oriental nations. In the main, the typical American farm has developed since the event of improved machinery and means of transportation. In New England and other eastern states farms that were developed prior to this period and on the hand labor basis have been unable as a rule to meet the competition of the larger and more cheaply operated farms in the central and western states. Only by completely changing the type of farming, in the way of truck crops and dairying to supply the large manu-

facturing centers in New England, has the eastern farmer been able to succeed. Hundreds of thousands of acres of land not suited to such a change have reverted to woodland and timber.

Capital is even more important to the tenant farmer than to the farm owner. Data in Table III, also

TABLE III

Capital Related to Labor Income—Farms Operated by Tenants—Northern Livingston County, N. Y.

Capital of Operator	Number of Farms	Aver. Labor Income
1000 or less	20	\$368
1001-2000	65	481
2001-3000	54	610
3001-4000	27	626
4001-5000	16	869
More than 5000	22	1282

taken from Warren's *Farm Management*, show the relation between the tenant's capital and the annual income received for his labor. As the tenant's capital is wholly invested in equipment, live stock, and supplies, he should be able to operate the same sized farm as the farm owner who had approximately four times that capital. We have noted that the farm owner, with from \$15,000 to \$20,000 invested, received an average income of \$1,001, and from Table III we find that tenants with \$4,000 to \$5,000 receive an income of \$869. The addition of \$1,000, therefore, to the tenant's capital gives him the possibility of the same increase in income as the addition of from \$4,000 to \$5,000 to the farm owner's capital. Data from several sources on the returns to landlords indicate only a moderate rate of income, averaging from 3 to 5 per cent, while capital invested in equipment and in the hands of an equally competent operator returns from 15 to 20 per cent.

The lesson is plain that a young man with a small amount of capital can do very much better financially by renting than he can by buying, leaving out of account the benefits of home ownership and the prospective rise in land values. As a matter of fact, this is the usual procedure in acquiring a farm: first he works as a hired man; second, as a tenant; and third, acquires a farm of his own. No land should be held continuously for renting purposes, but we need some tenant farms in this country as stepping stones to farm ownership.

USE OF CAPITAL FOR FARM IMPROVEMENTS

One of the greatest handicaps to a farmer who is an efficient manager is the lack of capital to make adequate improvements to his land and buildings. Probably no form of investment pays better returns than tile drainage and yet many farmers have to wait a long period of years before they can accumulate sufficient funds to warrant making such an improvement. If funds were available to competent farmers they would be able to make their farms much more profitable from the very outset instead of waiting the best part of their lives before making these improvements. One of the primary factors of successful farming is the yield of crops. If it takes thirty bushels of corn to pay for growing an acre of corn and the grower obtains thirty-one bushels, he has a margin of profit of one bushel. If by tile drainage he can increase this yield to forty bushels and the added investment increases the cost to only thirty-three bushels, he has a margin of profit seven times as great. In the same way, by the addition of more live stock he is enabled to market his crops to better advantage

and to keep his labor employed throughout the year and increase his profits generally, but so often he is handicapped by insufficient farm improvements in the way of buildings.

Large amounts of capital are needed for the reclamation of farming areas when economic conditions show the need for such work. Bringing new farming areas into use when the opening up of these areas will interfere with the operation of existing farms and make them less profitable is not a sound undertaking. But when the needs of the people and the nation demand an increase in area and additional food products, capital can be very profitably employed in the way of reclamation, drainage, irrigation, and the like. In the past when thinking of reclamation, attention has always been directed to bringing into use new lands generally on the frontiers and far removed from markets. There is a possibility that some of the most profitable reclamation would be in restoring some of the semi-abandoned lands in the eastern and southern states, lands which are desirably situated as regards highways, transportation, and markets, but which are temporarily out of the field of production by reason of misuse or mismanagement during some period in the past. For instance, the addition of a ton of limestone and a certain amount of tile drainage on many hill farms in southern New York and northern Pennsylvania would work wonders towards putting such lands on a profitable paying basis.

FORMS OF CAPITAL NEEDED BY FARMERS

There are three distinct forms or types of loans needed by farmers. First, *the long term or mortgage loan* secured by real estate; second, *a shorter*

time loan or second mortgage, based partly upon real estate and partly upon personal property; third, *short term, or crop loans*. Funds for the first type of loan have been supplied through a great many agencies and by private investors. Today, the Federal Land Banks, are adequately meeting the needs of farmers for this type of loan and on a basis that is most advantageous to the borrower. The Land Bank loan is made at a low rate of interest, and has a long time for repayment, as worked out through the amortization plan. The success of the Federal Land Banks in the past two years is the best proof of the soundness of the system and the way they are meeting the needs of farmers for long time mortgage loans. The act should be amended to permit a maximum loan of \$25,000 instead of \$10,000 to one borrower, for at present the latter figure is inadequate even for the two man farm in most agricultural regions. The law under which the Federal Land Banks operate permits a maximum loan of only 50 per cent of the appraised value of the land and 20 per cent of the value of the buildings. Although this is a most desirable feature of the Farm Loan Act, assuring as it does a high degree of safety and resulting in a low rate of interest, yet the Farm Loan Act does not meet the needs of the young man with limited capital who wishes to begin farming. Such a young man usually needs additional funds based on the remaining security of the farm and oftentimes upon personal property in the form of live stock and equipment which he himself may own. For instance, a farmer buys a farm completely equipped for \$12,000; of which \$8,000 represents the value of land and buildings. He may have \$4,000 in cash

which he uses to pay for the personal property in the form of live stock, machinery, horses, etc. He is able to secure from the Land Bank, a loan of about \$4,000 or \$4,500 as first mortgage on the farm, valued at \$8,000. He still is short the \$3,500 or \$4,000 necessary to complete the purchase. In some instances the seller is willing to take back a second mortgage for this amount. In other cases very capable young men are unable to finance a farm by reason of having no way to obtain the funds for this second mortgage which would be secured partly by the farm itself and partly by the personal property which the borrower owns. This second mortgage will carry a higher interest rate and will be repaid in larger installments than the first mortgage. When given by a responsible party, experienced in the farm business, it is many times almost as good a loan as the first mortgage. This second mortgage, however, is not of the same nature as the first mortgage loan for an essential part of its security depends upon the integrity and management of the borrower. Although the personality of the applicant is an important feature, yet the Federal Land Bank must primarily consider the value of the farm, in view of the length of time that the loan is allowed to run; the personal element must be largely discounted for the farm may change hands several times before the mortgage is appreciably reduced by payments. There are difficulties in the way of national legislation which will provide funds for these second mortgages. They partake too much of a local character and must be handled by an agency which is in active and close touch with the borrower at all times. There is a possibility that as farmers become better

organized and as all their coöperative interests become centered through the Farm Bureaus some system of providing funds on second mortgages may be evolved.

The third type of loan needed by the farmer is a short term or crop loan, usually for three months or six, or even a year. Such loans are based largely upon the integrity and ability of the borrower and being of a local character are almost entirely a function of the local banks. In the strictly agricultural regions local financial institutions are meeting the needs of farmers along this line. In those districts where manufacturing and industrial agencies play an important part the amount of funds available for the farmer for these short term loans is exceedingly limited. Moreover, it is often the young man whose ability and integrity may be of the best but who on account of not having established himself in the region is unable to secure this short term credit, who is in the greatest need of it. These short term loans should not have the privilege of a long period of repayment for they are made primarily to pay current expenses. If a farmer cannot meet such obligations at the end of each year the chances are that he is unsuccessful in his management. The short term credit to the farmer must be made by an agency which comes in contact with the borrower personally and who can watch his daily operations. The usual procedure in securing these short term credits has been for the farmer to give the bank a note with one or more endorsements. Such practice is undesirable in many instances. Since the farmer has become an investor in government securities he is in a position to use these as collateral on a promissory note for short

time loans. This practice will encourage thrift on the part of the farmer to save and be able to purchase Liberty Bonds and other government securities merely for the sake of having such collateral at hand when he needs a

few hundred dollars for a short period in his business. In this way he will not need to bother his neighbors or his friends by asking them to sign his note and he will immeasurably improve his credit by such a procedure.

Capital Needs for American Industrial Development

By FRANCIS H. SISSON

Vice-President, Guaranty Trust Company of New York

PROGRESS is the watchword of American industry. The industrial development achieved in this country during the last half-century has been nothing short of miraculous, and this growth, of course, has been accompanied by a general increase in prosperity, for the increase in productive power has stimulated a similar increase in consuming power. Many things that fifty years ago were unheard of—of which the automobile is perhaps the most striking example—are now articles of the widest use. Many luxuries of Civil War days are today in the category of necessities, or almost necessary comforts, among all classes of society. But this wonderful improvement would not have been possible if production had not steadily exceeded consumption. The vast natural resources of this country have been made available because men and women have both worked and saved and because the surplus created by their energy and thrift has made possible productive processes, which have put these resources at the service of mankind.

THE NEED FOR CAPITAL INVESTMENT

Now the world has just emerged from an era of concentrated destructive activity. Men and materials have been destroyed and industrial energies turned from normal sorts of production to the turning out of munitions and other commodities to be shot away or otherwise annihilated. For the better part of two years this country engaged much of its energies

to the same end. Normal productive, constructive industrial enterprise has, therefore, suffered; we are far behind in our savings, in the proper sense of the word. A real deficit in our industrial equipment has been accumulated. With a growing population (and therefore increased consuming power) and greatly expanded foreign demand for our goods (because of the aggravated shortage of savings abroad), our industry finds and will find it difficult to meet demands upon it, if its need for capital cannot be met by a forthcoming supply. Incidentally, the present high price level both appears as a result, in part, of this shortage and necessitates increased investments in terms of dollars, for any development and expansion since everything that must be bought must be paid for at the high prices that obtain.

The Building Industry. No better illustration of the nature of the situation could be given than the building industry. Everywhere a shortage of buildings of various kinds is evident: dwellings, governmental and public buildings, industrial plants, and other sorts of structures. With the concentration of industrial activity on work of all kinds for the government during the greater part of 1917 and 1918, it was necessary to forego a large part of normal building. The deficit, however, must be made up and normal development resumed at the earliest possible moment, if much personal suffering and industrial difficulties are to be avoided.

Building activity reacts, of course,

on various other industries and affects the demand for their products: steel, lumber, brick, cement and housefittings at once suggest themselves. A spurt of building would, therefore, require extension of activities in these allied lines and force them to seek new capital to meet their requirements.

Motor Vehicles. The war was unquestionably destructive in its effects but it did teach or emphasize some valuable economic and industrial truths. One of these was the usefulness and adaptability of motor vehicles. No country is likely to gain more from this than the United States, if full advantage is taken of the opportunity at hand. For 1919 the estimated production of passenger motor cars in this country will be more than 2,300,000, or double that of 1918.

The influence of American participation in the war is once more evident in the great drop in production from 1917 to 1918. The probable doubling in the following twelvemonth, both emphasizes the making up of the deficit of production and increased war-time consumption and points to the greatly increased demand, both domestic and foreign, that has resulted from the lessons brought home by the war. The field for commercial trucks seems destined to grow steadily, and the need for capital to occupy this field will increase proportionately.

Nor must omission be made of the highly important allied line of tractors. Here, above all else, the war provided a stimulus. The almost superhuman feats of "caterpillars" over the battlefields of Europe, on artillery or other tractors or, still more, on tanks, proved beyond all doubt their great adaptability for various uses.

The world-wide shortage on the one hand of man-power and on the other

hand of foodstuffs, has made it imperative to substitute whenever possible in agriculture the marvelous powers of tractors for the more limited powers of men and beasts. In this same connection should be mentioned the inevitable increase of demand that will be felt, in the United States and abroad, for agricultural machinery of all sorts. American products are in demand in all countries where agriculture has passed the primitive stages, and here again the replacement of man-power by efficient machinery is certain to take place as a result of the destruction of war.

A moment's reflection will remind the reader of the number of industries affected by conditions in the automobile industry, the diversity of demand for the products of these industries, created by the production in a single year of well in excess of two billion dollars worth of motor vehicles, and their uses. Here is a demand entirely new both in quantity and quality, differing from that for building materials in so far as the latter is one that has had to be reckoned with in the past. Expansion of production facilities is therefore inevitable to meet this growing demand.

Mineral Oil Production. Closely allied to the remarkable development of motor transportation is that in mineral oil production. The run of crude oil for August, 1919, was 32,362,057 barrels, or at an annual rate of 388,000,000 barrels. During October, 1919, there were 157 oil companies organized, with a total authorized capitalization of \$613,610,000. No small part of this future, to be sure, represented securities issued or to be issued to take over and hold those of already existing companies; nevertheless, the magnitude of the figures is an interesting index of the

present position of the oil industry in the capital market of this country.

The vast prospecting and producing activity in oil is obviously in answer to a highly intensified demand. This demand is due to a number of causes, of which the increased use of motor vehicles is but one, although the most important. A second is the high price of coal, which makes manufacturers seek elsewhere for fuel. A third is the growing substitution of oil for coal as fuel, apart from questions of present high prices and based on general considerations of fuel efficiency. Ships and manufacturing and other plants are being equipped with oil-consuming furnaces in place of coal burners. There seems to be little doubt of steady growth in this important industry of fuel-oil production and of increased capital needs for the development of the industry.

The search for a substitute for coal as a generator of power has not been confined to increased use of petroleum. More and more attention is now being given to the possibilities of the development of the "white coal" resources of the country; in other words, of water power. For a number of years the discussions of the whole problem of conservation has effected legislation in regard to private development of water power and this development has been not a little retarded by the failure to provide for legitimate exploitation of the national resources in this field. With the industrial situation what it now is, living costs high, coal shortage world-wide and industry impatient to use to the full all available means of progress in order to increase production, there is a growing demand for the harnessing and employment of the tens of millions of horsepower that are now annually going to waste.

More liberal legislation in the near future seems not unlikely, which would promptly come into a demand for capital to take advantage of the opportunities thus provided.

New Industries. The war brought into existence or prominence a number of industries that were previously either non-existent or quite in their infancy. There comes to mind at once the *dye industry*. Not only the cutting off of German supplies of dyes and other chemicals concurrently with a demand of great proportions for these products, but the development of certain industries and manufactures whose chief products or by-products are allied to those of the dye industry, brought into being a full-fledged industry in this field. Without going into the possibilities or merits of protection for these new manufactures, it may be said that indications point to a very great probability of permanence for an American dye industry, efficient and self-supporting, which will be able to make legitimate and increasing demands on capital for its continued maintenance and growth. Other "war industries," such as the manufacture of *fibre silk*, chemicals other than dyes, and glass, for instance, have been established and give every promise of permanence in our national industrial scheme.

Production of textiles other than silk, from both animal and vegetable fibres, is constantly increasing in this country, and domestic and foreign demands are increasingly being met by the products of American textile manufacturers. The proportion of American cotton consumed by our own mills has for many years been growing, and further increase is the natural expectation. Inability of European producers to meet demands made on them is furnishing to this American industry as to

others an impetus that should bring about a permanent and not merely a temporary growth.

Industrial Machinery. American machinery, machine tools, and hardware generally, have never before been so sought after in all parts of the world as they are today. The manufacture of such articles is obviously not a war industry, but the conditions that at present obtain are clearly a product of the war and of the inability of the great European industrial nations to meet the usual requirements put upon them by other nations for products of this sort. While this may be considered primarily an aspect of foreign trade, in so far as it reacts on domestic production and needs for capital, it deserves to be mentioned. It has, further, both domestic and foreign aspects. In this age of steel all industrial progress means an intensified demand for steel products. Buildings, automobiles, power plants, mining operations, factory manufacture, railroads,—all these and almost everything else that might be mentioned has as its basis the use of steel. In this country and abroad there is much deferred maintenance to be taken care of, in both industrial plants and railroads.

The Railroads. The railroads, which have been under-maintained during and as a result of the war, must have hundreds of millions of dollars in new capital. It has been estimated, in fact, that these arteries of transportation will require a billion dollars a year for a number of years to purchase needed equipment and to expand their facilities sufficiently to keep pace with the rapid development of the country. And it is absolutely essential that this new capital be made available to the railroads, through the enactment of proper legislation which will enable the

roads to earn a fair return on their invested capital and thereby reestablish railroad credit. Otherwise, business in general throughout the country will inevitably suffer and our national prosperity will be impaired.

American steel plants and machine shops will be called on to supply, both here and elsewhere, tools of production and engines of transportation for the reestablishment of normal conditions. In the same class is the demand for manufactured products of various kinds that results from the era of ship-building and ship operation upon which we have as a nation entered and which gives promise of continuance. The proportions of our foreign trade and its world-wide character afford the highest incentive to domestic operation of shipping lines that has ever been presented to our citizens.

Foreign Trade. Our foreign trade itself deserves mention at this point. There is no question as to the desirability of maintaining an extensive foreign trade, and at the same time there is no question that credit must play a large part in the financing of such trade. Neither banking institutions nor mercantile nor manufacturing concerns can afford to extend necessary credits abroad unless the domestic financial situation is such as to warrant the diversion of funds to this end. And it is clearly not possible for the domestic situation to be all that it should be unless the basis for the extension of all credit, namely, real thrift and saving, is present.

There looms on the horizon, in connection with our foreign trade, the question not merely of current short-term credits for ordinary transactions, but the question of long-term credits to the European nations; in other words, the question of investments in

foreign securities. The commitments of the United States are such, and its interest, both selfish and unselfish, in the welfare of our former Allies is such that it seems inevitable that we should extend to them the financial help which they need in order to return to something like a normal basis of production and a normal balance between production and consumption. This, therefore, affords still another channel for the judicious exercise of thrift and investment power.

There have now been suggested some of the outstanding probable needs for capital for industrial development in the United States. The list is far from exhaustive,—in fact, merely suggestive. There is every indication of increasingly urgent calls for domestic investment in every field of industry. New records are constantly being made in

the issues or authorization of new securities. Business men everywhere are seeing and trying to seize new opportunities for the profitable use of capital. The incentive will be still greater when the passing of present abnormal financial conditions makes possible the removal of some of the government taxes which now weigh heavily on certain types of undertakings.

Savings and investment must be and are the basis of all industrial progress. Without them, progress is impossible, for unless more is produced than is consumed, unless a surplus of production is a normal result of human endeavor, retrogression in the struggle with what has been called the “niggardliness of Nature” is inevitable. Thrift was never more necessary in the world’s history than it is today.

Capital Needs of Foreign Trade

By THOMAS W. LAMONT

New York City

JUST what the maintenance of our normal foreign trade requires is a new question for the American people, and also one of great moment. It is in the fore-front of leading public affairs today. Although it is a new question, it is not a question that has come upon us suddenly. Rather it is a situation that has been creeping upon us over the last five years, and its proportions have been steadily growing greater. To be sure, almost everybody has been aware of the tremendous expansion that has been taking place in our foreign trade, yet only a few people have been much concerned with the problems growing out of it. Up to a comparatively recent date the American seller and the foreign buyer have not been much troubled with such terms as "balance of trade" and "rates of exchange," because the loans made by the American Government to foreign governments relieved the American seller and the foreign buyer of much the burden of financing their transactions.

RELATION OF CREDITS TO FOREIGN TRADE

A brief review of the last five years will help us to understand the relation of credits to foreign trade, as well as show the capital needs of American foreign trade during that period. In the five years ended June 30, 1919, the merchandise exports from the United States to all countries amounted to \$26,536,000,000. They increased from \$2,364,000,000 in 1914 to \$7,225,000,000 in 1919. After offsetting the

merchandise imports from all countries, we still had a merchandise export balance—an excess of exports over imports—amounting, in this five year period, to \$13,963,000,000. In addition to this merchandise export balance, our net exports of silver amounted to \$382,000,000, making a total balance of \$14,345,000,000 in our favor.

Statisticians will, for long years to come, find play for their imagination in figuring how this balance was settled; for no one knows just how much of it was settled by the so-called unrecorded and invisible items. We know that our net imports of gold amounted to \$993,000,000. It is estimated that we also loaned abroad \$11,702,000,000 including \$9,102,000,000 credits, granted by our government to foreign governments. These figures indicate a balance of \$1,650,000,000 that was settled by unrecorded and invisible items: such as interest and dividends of American securities held in foreign countries; payment of principal of maturing indebtedness; the repurchase from foreigners of American securities; the payment of freight charges to foreign ship-owners; remittances to foreign countries by foreigners resident in the United States; expenditures of American military and civil establishments abroad, and other similar items entering into the international balance sheet. We must also remember that during the period of our participation in the war our government exported great quantities of goods not only for its own use but also for sale to its Allies. These govern-

ment exports are unrecorded. If they had been added to the recorded exports, the balance settled by invisible items must have been much greater than the amount indicated above.

Now, it is manifest that the great bulk of the export balance was settled by the *extension of credit* to foreign buyers. It is also a fact that these credits consisted chiefly of loans granted by our government to foreign governments. But it is equally true that the American people were able to produce and to save and to lend large sums to foreign buyers, as well as the very much greater amounts loaned to our own government, to enable it in turn to make vast advances to foreign governments, for goods purchased in America by them and their nationals.

FOREIGN TRADE SINCE THE ARMISTICE

Balance of Trade.—Since the armistice was signed in November, 1918, government control of commerce and industry, both here and abroad, has been gradually relinquished, and government administration of private business has been gradually restored to private enterprise. What has happened as regards our foreign trade? With the war over, the excess of our merchandise exports over our imports for the first eight months of the 1919 calendar year was \$3,012,000,000, as compared with \$1,948,000,000 for the same period in 1918 and \$41,000,000, for the corresponding period in 1914. In addition to this excess of merchandise exports, the net exports of silver and gold amounted to \$250,000,000. It is estimated that the net repayments of private loans abroad in this period were \$225,000,000, so that the balance to be settled for these eight months totaled \$3,488,000,000.

How has this unprecedented balance

been settled? Of the total our government granted credits amounting to \$1,987,000,000. For this period then, \$1,501,000,000 was apparently settled by other than visible items. In these it is believed that the settlement by the government of its accounts with foreign governments for expenditures abroad played an important part.

In line with the programme of relinquishment of government control of private business, our government has now practically ceased to lend, and foreign governments have 'practically ceased to borrow, the sums needed by foreign manufacturers and merchants to pay for goods they want to purchase in America.

Effects of Decreased Credit Facilities.

—Because our government advances abroad have been cut off, and American manufacturers and merchants are no longer able to rely upon this resource for the handling of their export sales, the foreign trade problem now confronting the American people has become of the greatest moment. And the foreign trade problem becomes a new one even to people who have been doing a large export business. Such people, who, under government auspices, have been doing a large volume of export business without being much concerned with such matters as "balance of trade" and "rates of exchange," are beginning to find it difficult, if not impossible to transact their export business. They are beginning to have their export orders cancelled, because of lack of credit facilities.

Causes of Foreign Trade Difficulties.—

We do not have to go far to find the reason. With government control over commerce largely removed and government financing of foreign trade practically stopped, the tremendous excess of purchases over sales in American mar-

kets by European countries has brought about an extraordinary fall in exchange rates. In other words, the foreign buyer now needs a much greater quantity of his foreign money to buy goods in American markets, and it has become increasingly burdensome to him to purchase such goods.

Take the British buyer for example: With sterling exchange at par, he formerly had to have £206 to buy \$1,000 worth of goods in the United States. At the prevailing rate of exchange (this is being written early in November 1919*) he must now have £240 to buy \$1,000 worth of goods here. Even if the prices of the goods were no higher than formerly, the British buyer is obliged, owing to the fall in sterling exchange, to pay the equivalent of \$1,170 for \$1,000 worth of goods bought here. Similarly the French buyer now has to have Francs 8,850 to buy \$1,000 worth of goods in America, where formerly he had to have only Francs 5,180. The Italian buyer now has to have 10,820 lira where formerly he had to have only 5,180 lira. Similar comparisons apply to buyers in Belgium, Norway, Sweden, Denmark and Finland. And in this connection it should be noted that in the first eight months of the 1919 calendar year, 58 per cent of the total exports from the United States went to the eight countries mentioned.

THE FUTURE OF OUR FOREIGN TRADE

Now, as to the future. No one believes that America can go on piling up an export balance in its favor of \$4,000,000,000 a year. Our exports reached their peak last June, with the staggering total of \$919,000,000 for that one month. In that same month our im-

ports were \$293,000,000, leaving in our favor a prodigious export balance of \$626,000,000 for the month of June alone. It is certain that the turn will come soon, if it is not already here. Early in the past summer foreign exchange rates fell heavily, making it very burdensome to foreigners, as I have pointed out, to purchase goods in American markets, on account of the great premium on the American dollar. In September our exports dropped to \$596,000,000, while our imports rose to \$435,000,000. So that the export balance in our favor for that month was reduced to \$161,000,000.

Decline of Our Export Balance.—There are several reasons why our exports must decline. One is, that the impoverished European countries will sensibly import only the bare necessities for their domestic and industrial existence. American luxuries they will do without. Even though by such curtailment we forego profits, we should be glad to witness such an exhibition of frugality. On the other hand, our imports must increase. Neither should this result be deplored. We should be glad to see agriculture and industry made productive again in Europe, and we ought to welcome the opportunity to buy in Europe those things which the people over there can make for us better than we can make them for ourselves.

Foreign Credit Necessary.—Of course, the net result of the decrease in our exports and the increase in our imports will be, that the export balance in favor of this country will decline. But it is of greatest importance to us that this change should come about gradually and not abruptly. It is vital that the people of Europe should be able to secure in America the bare necessities of their domestic and indus-

* Since this was written the premium on the American dollar has become much greater.—Ed.

trial existence. It is equally important for America to sell those necessities, unless we wish to invite a violent change in our industrial conditions. If the contraction of our export balance is to be gradual rather than abrupt, we must continue to extend credits to our foreign customers, for there will be a considerable export balance for some time to come. We can count on only a limited amount of gold imports.

Extent of Foreign Credit.—It is hazardous, of course, even to venture a guess as to the amounts of foreign credits that will be required in the next year. It is true that our imports from Europe have increased from \$22,000,000 in January of this year to \$89,000,000 in September. In September our exports to Europe were the smallest, and our imports from Europe were the largest, of any month in this year. But, even in that month, our exports to Europe exceeded our imports from Europe by \$272,000,000. Even if we assume that Europe can reduce her purchases from the United States by a substantial sum each month, and can also increase her exports to the United States by a substantial sum each month, it seems likely that the merchandise export balance in favor of the United States against Europe for the fiscal year ending June 30, 1920, will amount to about \$3,000,000,000.

No one knows how this balance will be settled. No doubt we shall receive some gold. Probably some American securities still held abroad will be sold in our markets. It may be that some of the indemnities payable by Germany and Austria will be available for our Allies to utilize or pledge in the United States. But no one can tell how much of our merchandise export balance will be offset by the invisible

items. If we assume that the invisible items will amount to \$1,000,000,000, there will still be a balance of \$2,000,000,000, to be settled during the present fiscal year by imports of gold or the extension of credit. How is Europe going to get these credits in America? Will America be able to lend \$2,000,000,000 to Europe?

THE ABILITY OF AMERICA TO EXTEND FOREIGN CREDIT

America's ability to lend this sum will depend on the willingness of her people to produce and to save. To be sure, \$2,000,000,000 is a great sum of money and yet if the average savings of every person in the United States were only 20 cents per day for 300 days, the aggregate savings produced would be \$6,000,000,000. To be sure, some of these savings would be needed by the capital requirements of our own country, but there would still be a large sum that could be loaned to our foreign customers in Europe. During the last two or three years our people have been educated in saving. Twenty million Americans subscribed to our Liberty Loans. Now that the war is over, are we going to throw this education "into the discard," because of a notion that the necessity for saving ended with the defeat of Germany? Are we going to abandon the new habits of thought and action we so recently acquired? Wars are never profitable to a people. Yet it is true that one of the most valuable lessons which the war taught us is thrift, and President Wilson's words are as true today as when he spoke them on April 15, 1917:

Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring.

Europe is doing much to restore her own condition. But by herself Europe cannot do all. She cannot return to full health without our help, and that is where every citizen of America has a responsibility. Europe as a whole, with certain countries excepted, needs food, clothing, and raw materials for manufacture.

The tabl which appears below shows what have been the principal articles exported from this country in the first eight months of the 1919

calendar year. It shows clearly what articles Europe is most in need of. It shows also that people all over this country have a vital interest in the problem of our foreign trade and international credits. It shows that the co-operation and exertion of the whole people are needed to produce a surplus of goods for export to Europe, and to save up the capital that we need to lend to Europe to enable her to purchase these goods.

The extension of credit, the render-

EXPORTS OF DOMESTIC MERCHANDISE TO ALL COUNTRIES; VALUES BY PRINCIPAL ARTICLES.
EIGHT MONTHS ENDING AUGUST,

	1914	1918	1919
Agricultural implements	\$19,946,000	\$24,198,000	\$32,963,000
Animals	3,472,000	10,734,000	6,407,000
Brass and manufactures of	4,559,000	21,377,000	9,917,000
Wheat	76,805,000	50,774,000	223,909,000
Flour	31,756,000	198,949,000	221,689,000
Other breadstuffs	17,840,000	232,647,000	192,503,000
Cars, carriages and other vehicles . .	30,361,000	95,831,000	159,655,000
Chemicals, drugs, dyes and medicines	17,792,000	111,145,000	86,352,000
Coal and coke	37,851,000	77,486,000	76,482,000
Copper and manufactures of	89,713,000	143,153,000	78,767,000
Cotton, unmanufactured	236,409,000	385,295,000	674,979,000
Cotton, manufactures of	30,428,000	111,359,000	170,615,000
Electrical machinery, appliances, etc.	13,655,000	38,612,000	62,320,000
Explosives	4,143,000	169,120,000	18,718,000
Fibers and manufactures	7,725,000	22,633,000	18,996,000
Fish and fish products	5,813,000	21,552,000	29,944,000
Fruits and nuts	13,190,000	20,354,000	70,989,000
India rubber and manufactures of . .	7,679,000	20,756,000	34,826,000
Iron and steel, and manufactures of	140,246,000	704,676,000	684,662,000
Lead and manufactures of	3,524,000	10,861,000	6,348,000
Leather and tanned skins and manufactures of	35,491,000	60,606,000	191,961,000
Meat and dairy products	89,079,000	663,089,000	905,042,000
Naval stores	11,596,000	5,967,000	18,859,000
Oil cake and oil cake meal	10,883,000	882,000	19,312,000
Oils, vegetable	10,368,000	21,831,000	65,510,000
Oils, mineral	95,199,000	227,470,000	214,997,000
Paper, and manufactures of	13,337,000	33,420,000	65,034,000
Sugar and molasses	3,494,000	11,134,000	86,709,000
Tobacco and manufactures of	33,385,000	94,849,000	184,102,000
Vegetables	5,413,000	25,661,000	37,308,000
Wood, and manufactures of	61,279,000	57,762,000	85,402,000
Wool, manufactures of	3,148,000	13,557,000	28,658,000
Zinc, and manufactures of	699,000	13,264,000	18,227,000
Totals—above items	\$1,166,278,000	\$3,702,004,000	\$4,782,167,000
Percentage of above items to total exports	90.62%	93.82%	92.79%
Totals—all exports	\$1,286,875,000	\$3,945,456,000	\$5,153,398,000

ing of help to Europe, is a work for every reader of this volume. If we do not do our share, nobody else will. Europe wants to buy wheat. Our farmers have wheat to sell. Very well, the farmers must sell that wheat on credit; not all of it on credit, but a reasonable share. The farmer will extend that credit, not as to a single shipment of a hundred bushels, but through the method of investing in a thousand dollar bond of some solvent European country that may offer her promise-to-pay for sale here; so that with the credit which she established her people can buy American wheat. And the same formula applies to all manufacturers, the same to all mer-

chants. If we do not want the people of Europe to go hungry and cold, we will produce and save the wheat and the cotton they need, and we will lend them the money to pay for it. This we will do by concerted saving. Our people have proved that they have acquired the habit of efficient providence, of care rather than of carelessness—qualities that go far to affect materially, and for the better, all our national activities.

America must be first in generous thought and action; first in the confidence which she shows in her fellow nations; first in the heart of all the world by reason of her friendliness and helpfulness to the world.

Memorandum on the Economic Situation

By HERBERT HOOVER

Director General of Relief; Executive Officer of the Supreme Economic Council and of the American Relief Administration

DEMORALIZED PRODUCTION IN EUROPE

THE rehabilitation of Europe is immediately and primarily a European task but it is of tremendous concern to America and, for that matter, to the entire world. If America and the other countries of the world are to prosper, if civilization is to go forward rather than backward, Europe must get on her feet. She must rebuild and set up her industrial plant and put her men to producing the necessities of life. Although the chief part of this task of rehabilitation must be done by Europe herself, America must, temporarily at least, furnish her not only with food, raw materials, and equipment, but also with credit to finance the imports which she needs.

The economic difficulties of Europe as a whole at the signature of peace may be almost summarized in the phrase "demoralized productivity." The production of necessities for the European population of 450,000,000 (including Russia) has never been at so low an ebb as at this day.

A summary of the data in the records of the unemployment bureaus in Europe shows that 15 million families are receiving unemployment allowances in one form or another and are in the main being paid by a constant inflation of the currency. A rough estimate indicates that the population of Europe is at least 100 million greater than can be supported without imports and it must live by the production and distribution of exports. This situation is aggravated not only by

lack of imports of raw materials but also by low production of European raw materials. Due to the same low production, Europe is today importing vast quantities of certain commodities which she formerly produced for herself and can again produce. Generally, not only is production far below even the level at the time of the signing of the armistice but far below what is necessary for the maintenance of life and health unless there shall be an unparalleled rate of import.

Even prior to the war, European peoples managed to produce from year to year but a trifling margin of commodities over what was necessary for consumption, plus what was necessary to export in exchange for essential imports. It is true that in pre-war times Europe managed to maintain armies and navies, together with a comparatively small class of non-producers, and to gain slowly in physical improvements and investments abroad, but these luxuries and accumulations were only at the cost of a dangerously low standard of living to a very large number. The productivity of Europe in pre-war times had behind it the intensive stimulus of individualism and of a high state of economic discipline, and the density of population at all times responded closely to the resulting volume of production. During the war the intensive organization of economy in consumption, the patriotic stimulus to exertion and the addition of women to productive labor largely balanced the diver-

sion of man power to war and munitions. These impulses have now been lost.

CAUSE FOR DECREASED PRODUCTION

It is not necessary to review at length the causes of this decrease of productivity. Chief among them are the following:

(1) The *industrial and commercial demoralization* arising originally out of the war but continued out of the struggle for political rearrangements during the armistice, the creation of new governments, and the inexperience and friction between these governments in the readjustment of economic relations.

(2) The *proper and insistent demand of labor for higher standards of living* and a voice in administration of their effort has unfortunately become impregnated with the theory that the limitation of effort below physical necessity will increase the total employment or improve their condition. Nor can it be overlooked that this particular line of defense by labor—no matter what its economic results may be—is to some degree the result of offensives against it.

(3) There is a great *relaxation of effort* as the reflex of the physical exhaustion of large sections of the populations from privation, and from the mental and physical strain of the war.

(4) To a minor degree, considering the whole volume, there has been a *destruction of equipment and tools* and loss of organization and skill due to war diversions in addition to a loss of man power. This latter is not at present pertinent in the face of present unemployment.

RESULTS OF DECREASED PRODUCTION

The demoralization in production of

coal in Europe today is an example in point of all these three forces mentioned above and promises a coal famine accompanied by industrial disaster unless remedied. It is due in part to the destruction of man power and the physical limitation of coal mines or their equipment. It is due in the largest degree, however, to the human factor of limitation of effort.

The continuation of the blockade after the armistice has undoubtedly destroyed enterprise even in open countries, and has of course prevented any recovery in enemy countries. The shortage in overseas transportation and the result of the uncertainties of the armistice upon international credits have checked the flow of raw materials and prevented recovery in the production of commodities especially needed for exchange for imports from overseas. The result of this delay has been unemployment, stagnation and absorption of capital in consumable commodities to some extent all over Europe.

From all these causes, accumulated to different intensity in different localities, there is the essential fact that unless productivity can be rapidly increased, there can be nothing but political, moral and economic chaos finally interpreting itself in loss of life on a scale hitherto undreamed.

ECONOMIC PHENOMENA

Reaction from strenuous economies.—Coincident with this demoralization in production, other disastrous economic phenomena have developed, the principal one of which is that the very large wage-paid special workers and the large sums accumulated by speculation and manufacture during the war have raised the standard of living for many individuals from the level of mere

necessities to a high level of luxuries. Among many other classes, also, there is a reaction from the strenuous economies against waste and the consumption of non-essentials in all countries. As a result there is today an outbreak of extravagance to a disheartening degree.

Higher Standard of Living.—Another economic change of favorable nature from a human point of view, but intensifying the problems of the moment, has been the rise in the standard of living in large sections of the working classes through the larger and better wage distribution, separation allowances, etc., during the war. Parallel with these classes are those of fixed income, the unorganized workers, and the unemployed upon whom the rising cost of living is inflicting the greatest hardship.

INABILITY OF THE WESTERN HEMISPHERE TO REHABILITATE EUROPE

During some short period, it may be possible for the Western Hemisphere, which has retained and even increased its productivity, to supply the deficiencies of Europe. Such deficiencies, if met, will have to be supplied in large degree upon credits but aside from this the entire surplus productivity of the Western Hemisphere is totally incapable of meeting the present deficiency in European production if it is long continued. Nor, as a practical fact, can credits be mobilized for this purpose for more than a short period, because all credits must necessarily be simply advances against the return of commodities in exchange, and credits will break down the instant that the return of commodities becomes improbable. Further, if such credits be obtained for more than temporary purposes, they will result in the economic slavery of Europe to the Western

Hemisphere and the ultimate end will be war.

Consequently the solution of the problem, except in its purely temporary aspects, does not lie in a stream of commodities on credit from the Western Hemisphere, but lies in a vigorous realization of the actual situation in each country of Europe and a resolute statesmanship based on such a realization. The populations of Europe must be brought to a realization that productivity must be instantly increased.

DEMAND FOR ECONOMIC CHANGE IN STATUS OF LABOR

The outcome of social ferment and class consciousness is the most difficult of problems to solve. Growing out of the yearning for relief from the misery imposed by the war, and out of the sharp contrasts in degree of class suffering, especially in defeated countries, the demand for economic change in the status of labor has received a great stimulus leading to violence and revolution in large areas and a great impulse to radicalism in all others. In the main these movements have not infected the agricultural classes but are essentially an urban phenomenon.

In this ferment socialism, or communism has embraced to itself the claim to speak for all the down trodden, to bespeak human sympathy, to present remedies, and to be the lone voice of liberalism. Every economic patent medicine has been put under this banner. Europe is full of noisy denunciation of private property as necessarily being exploitation. Industrial labor, even in non-revolutionary countries, has put considerable reliance upon some degree of communism. Extremists are loud in asserting that production can be maintained by the impulse of altruism alone, instead of self-interest.

Too often they are embracing criminal support and criminal methods to enforce their ideals of human betterment. Every country is engaged in political experimentation with varying degrees of these hypotheses, and thus far every trial has reduced production.

The Western Hemisphere with its more equitable division of property, its wider equality of opportunity, still believes that productivity rests on the stimulus from all the immutable human qualities of selfishness, self-interests, altruism, intelligence and education. It still believes that the remedy of economic wrong lies not in tampering with the delicate and highly developed organization of production and distribution, but in a better division of the profits arising from them. It still believes in the constitutional solution of these problems by the will of the majority, while Europe is drifting toward the domination of extremist minorities. The Western Hemisphere is still producing a surplus over its own needs.

The first and cardinal effort of European statesmanship must be to secure the materials and tools to labor, and to see that its men return to work. It must also secure a recognition of the fact that whatever the economic theory or political cry be, it must call for the maximum individual effort, for there is no margin of surplus productivity in Europe to risk in revolutionary experimentation. *No economic policy that does not secure the maximum production will bring food to those stomachs or fuel to those hearths. There is no use of tears over rising prices! They are, to a great degree, a visualization of insufficient production.*

NEED FOR CONSERVATION IN CONSUMPTION

During the period of reconstruction

and recovery from reduced productivity, the conservation in the consumption of non-essential commodities is more critical than at any time during the war. The relaxation of restriction on imports and on consumption of articles of this character since the armistice is disheartening. It finds its indication in the consumption of beverages and articles de luxe in many countries, increased even above a pre-war normal. Never has there been such a necessity for the curtailment of luxury as exists today.

INFLATION OF CURRENCY

The universal practice in all the countries at war of raising funds by inflation of currency is now bringing home its burden of trouble. In extreme cases the most resolute action must be taken, and at once. In other countries having a lesser degree of inflation, such currency must be reduced and included in the funded debt or, as an alternative, the costs of wages, living and international exchange must be expected to adjust themselves to this depression. The outcry against the high cost of living, the constant increase of wages and the fall in exchange that is going on are in a considerable degree due to this inevitable readjustment.

EFFECT OF PRICE CONTROL ON PRODUCTION

The stimulation of production lies in the path of avoidance of all limitations upon the reward to the actual producer. In other words, attempts to control prices (otherwise than in the sense of control of vicious speculation) are the negation of stimulation to production, and can only result in further curtailment of the total of commodities available for the total number of

human beings to be fed, clothed and housed. There still exist in Europe great bureaucracies, created from the necessity of control of prices and distribution by the conditions of the war, which are loath to recognize that, with world markets open, no such acute situation exists and that their continued existence is not essential except in the control of speculation.

The argument so much advanced, that world shortage may develop and that this justifies continued control of distribution and prices is based upon the fallacious assumption that even if the world markets are freed of restraint that there is a shortage today in many commodities so profound as to endanger health and life. From any present evidence, thanks to the high production outside of Europe, no shortage exists that will not find its quick remedy in diminished consumption or substitution of other commodities, through minor alteration and price. All attempts at international control of price, with a view to benefiting the population in Europe at the cost of the producer elsewhere, will inevitably produce retrogression in production in other parts of the world, the impact of which will be felt most in Europe. A decrease of 20 per cent of Western Hemisphere wheat would not starve the West; it would starve Europe. It must never be overlooked that control of prices and distribution cannot stop with a few prime commodities but, once started, its repercussions drive into a succeeding chain of commodities and that on the downward road of price control, there can be no stoppage until all commodities have been placed under restriction, with inevitable stifling of the total production. It is also often overlooked by the advocates of price control that,

whereas the high level of production was maintained during the war even under a restraint of price, this high production was obtained by the most vivid appeal to patriotic impulse on both sides of the front. This stimulus to production and distribution no longer obtains and the world must go back to the prime motive, which is the reward to the individual producer and distributor.

That body of advocates who have deduced from war phenomena that production and distribution can be increased and maintained by appealing to altruism as the equivalent of patriotism or self-interest should observe the phenomena of Russia where the greatest food exporting country is today starving. It must be evident, also, that the production cannot increase if political incompetence continues in blockades, embargoes, censorship, mobilization, large armies, navies and war.

PUBLIC UTILITIES

There are certain foundations of industry in Europe that, no matter what the national or personal ownership or control may be, they yet partake of the nature of the public utilities in which other nations have a moral right. For instance, the discriminatory control of ships, railways, waterways, coal and iron in such a manner as to prevent the resumption of production by other states will inevitably debar economic recuperation and lead to local disputes and economic chaos with their ultimate infection abroad, to say nothing of the decrease in productivity. These abuses are already too evident.

DUTY OF THE WESTERN HEMISPHERE

The question of assistance from the Western Hemisphere during a certain

temporary period, and the devotion of its limited surplus productivity to Europe, is a matter of importance and one that requires statesmanlike handling and vision. Although it is important, it is but a minor question compared to those stated above and it is in a great degree dependent upon the proper solution of the factors already touched upon. It is a service that America must approach in a high sense of human duty and sympathy. This service will, however, be best performed by the insistence that aid will not be forthcoming to any country that does not resolutely set in order its internal financial and political situations, that does not devote itself to the increase of productivity, that does not curtail

consumption of luxuries and the expenditure upon armament and that does not cease hostilities and treat its neighbors fairly. If these conditions are complied with, it will be the duty of America and all the Western Hemisphere to put forth every possible effort to tide Europe over this period of temporary economic difficulty. Without the fulfillment of these conditions, the effort is hopeless.

With Europe turned toward peace, however, with her skill and labor aligned to overcome the terrible accumulation of difficulties the economic burden upon the West should not last over a year and can be carried and will be repaid. To effect these results the resources of Europe and also those of the Americas must be mobilized.

What Fuel Conservation Means to America

By ROBERT W. WOOLLEY

Member of the Interstate Commerce Commission

AMERICA is confronted squarely with the problem of increasing her productivity per man power without, at least, increasing the cost of production per article. This in addition to any economies that may be effected through national obedience to the slogan "Produce more, save more and waste less." Such increased productivity per man power must come about through more efficient utilization of fuel, water power and machinery. I propose in this article to deal specifically with conservation of the two great articles of fuel—coal and petroleum—and more particularly with coal, for scientists agree that the days of petroleum as a commercial factor are numbered.

From *The Energy Resources of the United States: A Field for Reconstruction*, by Chester G. Gilbert and Joseph E. Pogue, volume 1, bulletin 102, of the Smithsonian Institution (United States National Museum), I quote as follows:

While it is commonly known that our present utilization of fuel is wasteful, it is not generally appreciated how very serious and extensive this default has become, how many lines of progress the current practice in this field is blocking, and how distinctly and heavily the whole matter is contributing to the cost of living. While the color of sensationalism is to be deprecated, the assertion cannot be avoided that this country has within its reach the means for effecting a saving in the matter of its energy supply of well over a billion dollars a year. * * * In this one direction alone lies a gain sufficient to recoup much of the expense of the Great War.

DECLINE OF PETROLEUM AND OIL SUPPLY

Referring to petroleum, Messrs. Gilbert and Pogue say:

The liquidity of the crude product makes petroleum unique among mineral raw materials, contributing wide commercial availability through the ease with which the substance may be mined and handled; while the magnitude of the resource has given confidence for the extensive mechanical developments essential to its use. Hence the employment of petroleum is deeply rooted among the practices and needs of modern life, and any tendency toward disuse of its essential products, either through undue increase in price or from decline in production, will mark a turning point in material comfort and industrial advantage, the deferring of which becomes an object of universal concern. As the petroleum deposits of the United States have been drawn upon with extraordinary rapidity and the supplies have already suffered serious depletion, the matter of their approaching exhaustion assumes the light of immediate importance. The comforting assertion that such considerations may be safely left to future generations does not apply to petroleum.

In a recent widely published statement, E. Mackay Edgar, a noted English authority on oil, predicted that in ten years the British Empire will be selling 500,000,000 barrels of oil annually to the United States. Estimating the value of this oil at \$1,000,000,000, he asserts it will be the means of restoring and maintaining sterling equilibrium. He said: "More oil has probably run to waste in the United States than has ever reached the refiners. Improvidence, carelessness, a blind gambling spirit, have marked all except the most recent phases of the industry. The great oil fields of the United States are nearing exhaustion, and it is not believed the new ones which are being proved will yield anything like the old prodigal production. America has recklessly, and in sixty

years, run through a legacy that, properly conserved, should have lasted her for at least a century and a half."

In other words, some fine morning not so far distant we are to awake to the realization that we have exhausted one of our principal sources of industrial greatness ninety years ahead of time, because as a nation we have felt it was unsound for the government to interfere in any degree with private enterprise—to curb the get-rich-quick promoter or speculator in the interest of all the people. As long ago as 1915, Secretary of the Interior Lane said in his annual report: "Petroleum is a priceless resource, for it can never be replaced. Trees can be grown again upon the soil from which they have been taken. But how can petroleum be produced? It has taken the ages for nature to distill it in her subterranean laboratory. We do not even know her process. We may find a substitute for it, but have not yet."

THE PROBLEM OF COAL CONSERVATION

True, we are equally reckless in the mining and handling of our coal. In their report just referred to, Messrs. Gilbert and Pogue say:

In spite of ample supplies in the ground, coal inadequately meets its obligations because of the competitive manner in which it is mined, the unnecessary extent to which it is transported, and the improper way in which it is used. The first has caused tremendous waste, the results of which will be felt heavily in the near future; the second has caused a coal shortage during the war and promises a repetition at every coming period of sudden industrial expansion; the third has imposed an excessive burden of cost upon the public. To prevent waste, to circumvent shortage, and to lower cost, changes in our system of coal economics are necessary. These changes must be determined by coal itself—by the nature of its geographic distribution, geologic occurrence, mining technology, and chemical composition.

The problem may be largely solved by coking our high volatile bituminous coals.¹ A process by which this may be done is one of the by-products of the war. The results of the government test of this process, held under the joint auspices of the Bureau of Standards and the Bureau of Mines, were not deemed by the War Industries Board to be sufficiently convincing to warrant its adoption as a means of increasing the production of benzol and other coal products necessary in the manufacture of high explosives, but upon favorable reports made by such distinguished scientists as Dr. Alex. C. Humphreys, president of the Stevens Institute, Mr. Alex. H. Twombly, a noted coke engineer and Mr. Y. Iwamura, coke expert of the Japanese government, private capital has undertaken its exploitation on a large scale. Since the signing of the Armistice, I am informed that a 10,000,000 yen company has been formed at Tokio, by the Industrial Bank of Japan, acting for the government, and that the construction of ovens in Japan and her dependencies on the mainland of Asia, is about to begin.

The first battery of ovens of formidable size is now being erected at Granite City, Ill., ten miles out of St. Louis at an estimated cost of \$15,000,000, and other batteries equally potential are planned at points in the heart of the soft coal regions—Jackson, Ohio, for instance—at such steel manufacturing points as Cleveland and at tide-water—for example, Bridgeport. It

¹ The beehive oven, which produces only coke, and the by-products ovens of German and Belgian design heretofore in use have only coked successfully the so-called, low-volatile, bituminous coals, which represent about 5 per cent of our coal supply and are to be found largely in the Connellsville, Pocahontas and Birmingham districts.

is only reasonable to suppose that in the not far distant future there will be other radical developments along this line. Now that the ice is broken and the possibilities are so glittering we may expect science to "carry on" at a rapid pace. One writer, in his enthusiasm, speaks of the invention of the new by-product oven as being even more important than was the advent of the sewing machine or the cotton gin. Time may prove this to be true.

Waste in Production.—Referring to the production of coal, Messrs. Gilbert and Pogue say:

It is wastefully used due to the lack of by-product recovery as an accepted economic practice. * * * The wastes in distribution may be reduced through the development of hydro-electricity and the coal-field generation of carbo-electric power, thus relieving coal of unnecessary duties, and by improvements in utilization, thus destroying the over-dependence upon high-grade coals which now necessitates undue haulage.

The wastes in utilization may be done away with by establishing a method of separating the energy-producing constituents of coal from the commodity values and using the products to their common advantage. The most logical point of attack is the municipality, to which may be attached a public utility plant converting raw coal into smokeless fuel—artificial anthracite plus gas, or gas alone—and valuable by-products, ammonia, benzol, and tar. Such a plant would supply the fuel needs of the community and ship the surplus by-products to serve as raw material for a coal-products industry, developed thereby to proportions consistent with its importance to social progress. * * *

By-product utilization will give cheaper fuel through the advantageous disposition of all the values contained. It will also end the smoke nuisance, relieve transportation, and cause the growth of a great coal-products industry with ultimate possibilities ranging beyond the grasp of the imagination.

I have quoted liberally from high scientific authority because when the railroads were first taken over by the

government I was asked by the director general—each member of the Interstate Commerce Commission undertook some special investigation looking to the working out of various phases of the railroad problem—to conduct an inquiry into the question of fuel economy. The serious difficulty encountered was lack of uniformity as to quality of fuel consumed in locomotives. I concluded that if it were practicable the burning of powdered coke offered the solution. Accordingly, at my request President Wilson directed the test of the new by-product oven referred to above. The results so far as the proposed burning of powdered coke was concerned were not satisfactory, but that was really of minor importance when one considers the big result—that most of our high volatile coals are available for the manufacture of metallurgical and fuel coke and the extraction of valuable by-products.

RESULTS OF COKING OUR COAL SUPPLY

The use of this new process is fraught with "ultimate possibilities ranging beyond the grasp of the imagination." Some of the potential results are:

1. That the amount of coal in the country from which metallurgical coke can be made is increased from 5 per cent of our available coal supply to between 40 and 50 per cent of this supply, or a net increase of between 800 and 1,000 per cent; this makes available for the manufacture of pig iron and steel many low grade ores now regarded as having a negligible value only because of their remote location from recognized coking coal regions.

2. That all coal now used by railroads, except anthracite, which nature has coked, can be coked and from the sale of the by-products the cost of production, including the price of the

coal, largely defrayed, thus making the coke obtained practically net; that in due time all railroads may be advantageously electrified.

3. That the enormous banks of culm, accumulated through the many years of mining anthracite coal and long regarded as so much waste, may be mixed with the high volatile coals which intersperse the anthracite region and coked for fuel at the banks or at the mines, thus adding very materially to the fuel supply in the coal region closest to the great industrial centers of the eastern and northeastern parts of our country.

4. That by coking all bituminous coal, low and high volatile, the total amount of which mined in 1917 was in round numbers 612,000,000 tons and using the same figures for 1918 for purposes of calculation—value at the mines, at \$3.50 per ton, \$2,142,000,000—there would have been produced:

(a) 437,144,400 tons of coke having f. o. b. market value, using standard quotations of \$6.00 per ton Connellsville, of \$2,622,866,400.

(b) By-products having f. o. b. market value of \$3,213,000,000.

(c) There would be a net saving in natural resources, allowing \$4.89 per ton of coke for coal used and cost of manufacture, of \$3,698,230,284 as compared with \$109,742,799, the estimated net profit on 19,059,361 tons of coke made in by-product ovens in 1917 from 26,683,105 tons, the total amount of coal coked that year in by-product furnaces; in a year, last year we wasted \$3,588,487,485 in natural resources through coal alone.

5. That the annual gasoline supply—fine oil recovered from coal is its like, but estimated to be 28 per cent superior—would be increased by 48,624,110 barrels; our total production of gasoline in 1917 was approximately 27,000,000 barrels. This means cheap fuel for tractors, trucks, automobiles and aeroplanes.

6. That the total gas supply of

the country, on the basis of 6,000 feet per ton of coal, B. T. U. 560, would be increased to 3,672,000,000,000 cubic feet, having a basic or at-the-mine value of 10 cents per 1,000 cubic feet, or \$367,200,000. This, of course, could be piped any necessary distance.

7. That through the recovery of light oils and of 12 gallons of tar per ton of coal made, or 7,344,000,000 gallons annually, having a present at-the-mine value of \$367,200,000, we would become the greatest nation of dye, drug and chemical producers in the world.

8. That the 18,360,000,000 pounds of ammonia sulphate—30 pounds per ton of coal—produced annually would so augment our fertilizer supply that our soil could be made to increase enormously in productivity per acre and would afford an abundance of an important ingredient of high explosives.

9. That the production of toluol, from which trinitrotoluol (T. N. T.) is made, would be increased enormously.

10. That there would be attributable to coal smoke no further reduction in the creative producing power of our people, estimated in the report on smoke abatement by the Chicago Association of Commerce to be \$1,000,000,000 annually, and that at least \$100,000,000 in paint and repair work, due to the ravages of acids and the destructive effect of coal smoke, would be saved each year. Every town and city in the United States could be made clean and kept clean.

11. That through cheap power our productivity per person would be so considerably increased that we would be able to pay higher wages and with our great merchant marine, once we are back to normal conditions, we could market our manufactures at a profit

even in countries having the cheapest labor.

12. That our national wealth would be so augmented eventually through the greatly increased value of our high volatile coals, now used for high grade purposes, that the cost of our participation in the war would be almost, if not quite, absorbed.

13. That by making possible the transmission of all power, light and heat from the pit heads of the mines, at a cost below any yet suggested, the saving in domestic labor and in personal inconvenience would be incalculable and poverty abolished or at least reduced to a very low minimum; that thousands of individual industrial power plants, so costly to operate, would be scrapped or used for power distribution.

14. That through natural processes the three greatest of our monopolistic groups—oil, steel and power—would, with the government owning and operating the super-power stations, be effectively and permanently broken up. So, among other things, the prospective loss of gasoline produced from petroleum is to be more than offset by benzol. That answers Secretary Lane's question in large measure.

THE NEW COKE OVEN AND THE ELECTRIFICATION OF RAILROADS

In my report to the director general of railroads on possible fuel economies, submitted eleven months before the work of Messrs. Gilbert and Pogue, from which I have quoted so liberally, was issued, I featured the test of the new coke oven and called attention to the generally admitted fact that our railroads must in the near future be electrified. I quote in part as follows:

The super-power station would entirely eliminate the transportation of coal for power

purposes and would relieve the railroads of the congestion caused thereby. This is more than half of all the coal used in the country. The amount of fuel needed to generate a unit of power in the super-power station would be much less than that required by our present local plants. Besides, the freight cost would also be saved; this is more than half of the coal item in present costs of power generation, and coal is by far the largest single item of cost. There are still other items of cost for power which would be reduced in the super-power station.

It is generally conceded that the electrification of steam railroads is imminent, but that the capital required for the generating plants and transmission lines is the chief present deterrent. The super-power plan would make the electrification of the steam railroads to a large extent possible at an early date, at least very soon after the conclusion of peace, when the copper needed for transmission lines is likely to be plentiful and cheap. It would increase traffic capacity from 25 to 50 per cent, would increase speed in transportation, and would practically eliminate railroad congestion, particularly during the winter season. It would entirely eliminate the transportation of coal for use by the railroads themselves.

The advantages to be secured through the electrification of steam railroads are many:

An electric locomotive will handle twice the load of a steam locomotive.

It operates best in cold weather when a steam locomotive has its greatest troubles.

On down grades what is known as regenerative braking returns from 25 to 50 per cent of the power used in climbing. This power is returned to the lines for the use of other locomotives climbing other grades. Regenerative braking is separate from air brakes, which are only used in emergency and in stopping a train. The trains run down any grade under perfect control, better in every way than by the use of grinding brakes, and at the same time electric current is being generated and returned back into trolley wires to assist in running other trains.

An electric locomotive can be operated over a thousand-mile run in mountain work with only casual inspection. A steam locomotive for the same service requires close attention and makes it necessary to maintain round houses and yards at frequent intervals. Most of these can be eliminated by electrification.

Electrification is the cheapest and most practical means for producing an increase in traffic capacity. There are three ways for producing this increase: first, additional tracks; second, elimination or reduction of grades; third, electrification.

The entire cost of electrification, including the power stations and transmission lines, is less than the cost of either additional tracks or the elimination or reduction of grades. By electrification the traffic capacity can generally be increased 50 per cent over what it is with steam locomotives. The electric locomotives go over the steepest grades with only a comparatively slight reduction in speed.

The electrification of the railroads would better the load conditions on the super-power stations, and this would tend to still further reduce the cost of generating power.

Military experts agree that if there is ever another war it will be waged largely with gas. Scientists are saying that the nation developing the greatest dye industry, with its necessarily

large complement of chemists, will be best prepared. This was the foundation upon which Germany built. In the limited space allotted me it is impossible to go even into meager details as to the possibilities of the dye industry. The point is that we are destined to lead the world as dye makers. I have not even touched upon the proper and logical development of our water power. That is a subject on which so much has been written that I have deemed it my duty to deal almost exclusively with what seemed to me to be the urgent and striking phases of the problem of conserving and efficiently utilizing our coal. If we are prudent, it is practically inexhaustible—and, thanks to the by-products process, is the source of the cheapest heat, light and power.

Food Thrift

By RAYMOND PEARL

Head of the Department of Biometry and Vital Statistics, The Johns Hopkins University;
formerly Chief of the Statistical Division of the United States Food Administration

FOOD AN INDEX TO THE COST OF LIVING

WHENEVER people become troubled by the high cost of living it is the cost of food which occupies the first and foremost place in their minds. Expenditures for clothing and for housing, the other chief items of cost in our merely physical struggle with the environment, come at relatively infrequent intervals as compared with those for victuals and drink, to use the old forth right phraseology. Every day one must buy his bread, and the sad fact of rising prices impresses itself with a vigor and depth which presently becomes soul-stirring. On the other hand, the common man buys his "new suit" so infrequently, and the purchase is furthermore such an adventure in itself, and one in which one wants to make a brave showing of being a regular man of the world, that a 50 or even 100 per cent advance in the price over what the last similar spree cost is met with substantial equanimity. During the war, prices of clothing in this country rose out of all proportion to the prices of food, but the public clamor about high prices virtually all centered around the latter.

There is real justification for this point of view also in the fact that in the maintenance of a family, food expenditure constitutes relatively a very large item. This has been most recently and thoroughly discussed by

Professor William F. Ogburn¹ from whose paper the data of the following table² are taken as illustrative of the facts at the present time:

TABLE I
*Cost of Actual Yearly Consumption of Food
Yielding Approximately 3500 Calories per
Man per Day (Data from Ogburn)*

Locality	Average Expend- iture for Food	Average Total Annual Expendi- ture for All Pur- poses	Equiva- lent Adult Males
New York.	\$678.73	\$1,470.20	3.33
Providence.	647.00	1,448.28	3.34
Boston.	628.92	1,310.20	3.34
Chicago.	613.10	1,514.00	3.30
San Francisco and Oakland	605.40	1,414.15	3.34
Seattle.	588.76	1,587.30	3.35
Denver.	569.23	1,357.13	3.35
St. Louis and East St. Louis	567.37	1,422.39	3.35
New Orleans (white).	564.76	1,368.37	3.34
Atlanta.	526.00	1,342.07	3.37
Minneapolis and St. Paul.	485.29	1,359.96	3.35
New Orleans (colored).	449.00	965.30	3.35

The significance of the column headed "Equivalent adult males" is to show that all the data were from families of approximately the same size so far as food needs are concerned.

Further data discussed by Ogburn show that at present price levels the

¹ Ogburn, William F. *A Study of Food Costs in Various Cities. Monthly Labor Review*, Vol. IX, pp. 303-327, August, 1919.

² *Loc. cit.*, p. 312.

expenditure for food constitutes, for constant size of family, from 28 to 38 per cent of incomes of \$2,100 per year, and from 39 to 50 per cent of incomes of \$900 a year, with intermediate percentages for intermediate incomes. It is no wonder that the problem of merely living has become an extremely acute one for many people in this country.

What is the way out? Any thoughtful student of economic forces in this country knows that it is not in the direction of a lowered price level, at least in the immediate future, particularly so far as food is concerned. The producer of food has economically come into his own during the war, and is not going to submit complacently to any marked lowering of the price level of *his* commodities at once. And in his power to curtail production he has, of course, an economic weapon of first magnitude. But in the practice of true thrift in regard to food expenditures the consuming public of this country has ready at its hand a means of coping with this problem which is also of the greatest significance and economic power. The remainder of this paper will be devoted to the task of demonstrating this proposition and endeavoring to show ways and means.

PER CAPITA FOOD CONSUMPTION

The first point to be considered in an analysis of the situation is to get reliable figures as to the normal per capita food consumption of the people of this country. I have recently made an extensive and thorough statistical investigation³ of this subject, and from that

study I wish to present certain results here. In the first place, it should be said that the basis of any adequate survey of food resources or consumption must be essentially physiological, rather than one of commodities or trade. Broadly speaking, the ultimate sources of food are the soil and the sun. The energy derived from the sun through the mechanism of the green plant builds up the inorganic chemical elements of the soil, air, and water into compounds which can be utilized as food by man, either directly or secondarily in the form of the products of animals which have been nourished on the primary foods of the plant world. Furthermore, food must be expressed, for proper statistical treatment, in the ultimate chemical or physiological nutrient components, protein, carbohydrate, and fat, with of course the energy value in calories.

Table II gives in chemical nutrients the food consumption of the United States on a total and per capita base, for a period of seven years between July 1, 1911 and June 30, 1918. Before entering on the detailed discussion of per capita consumption figures in Table II it is well to recall a fact which is liable to escape attention, unless special attention is called to it. This is the fact that the final figures in Table II, which are called "consumption figures," really include something more than consumption in a nutritional sense. They include the food actually eaten plus that which is wasted by loss in cooking, in garbage, etc. It is necessary to be entirely clear on this point.

³ Cf., Pearl, R. *The Relative Contribution of the Staple Commodities to the National Food Consumption*. Proc. Amer. Phil. Soc., Vol. LVIII, pp. 182-222, 1919. A detailed account of the research is in press in book form, under

the title *The Nation's Food* (W. B. Saunders Co., Philadelphia) and will shortly appear. In the meantime, it is necessary to ask the reader to take on faith the statement that the utmost critical care was taken to ensure the greatest attainable degree of accuracy in the final figures.

In calculating the nutrients in the intermediate calculations use has been made of factors which allowed for *inedible* refuse, so that all of the inedible portion of the foods as produced or imported have already been deducted in the calculations up to this point. Furthermore, gross losses from storage, spoilage, transportation, etc., have been deducted. Even after all these deductions have been made, however, it is obvious that there is still a considerable amount of loss and wastage of strictly edible material, which might be saved and consumed under a theoretically ideal system of preparing food for the table plus a conscientious ingestion of every bit of edible material. Of course, as a matter of fact, neither of these theoretically ideal conditions at all prevail. There is a considerable loss of nutrient values in the process of cooking as ordinarily practiced. This loss is undoubtedly greater for fats than for any other of the nutrients. It is a troublesome and time-consuming process for the housewife to conserve and utilize all of the fat which gets melted and floats about in the water in which foods are cooked, or adheres

to the utensils in which they are cooked. Nor, in the minds of most people, is there any necessity or desirability of saving this fat. In fact, a great many people in this country object very strongly to what they designate as "greasy cooking." Consequently, floating fat of soup stock is skimmed off and thrown away in the vast majority of instances. The result is that in calculations made in the way those of this study have been made, which include the total nutrient value in the edible portion of food materials, after deducting inedible waste and the losses which accrue up to the time the food reaches the consumer, there is bound to be an apparently high consumption of fats. The figures here presented are really statements of consumption plus edible waste and should be so regarded.

Another important factor is that of edible waste in garbage, that is to say, the uneaten portion of the prepared food which is edible and might be consumed, but is not for reasons of taste, over-estimation of ingestive capacity, etc.

Looking at the matter from the na-

TABLE II
Consumption per Adult Man

Year	Protein		Fat		Carbohydrate		Calories	
	Per Annum (Kilos)	Per Day (Grams)	Per Annum (Kilos)	Per Day (Grams)	Per Annum (Kilos)	Per Day (Grams)	Per Annum	Per Day
1911-12.....	44.70	122	62.12	170	195.48	536	1,563,450	4,283
1912-13.....	44.04	121	60.44	166	198.68	544	1,558,232	4,269
1913-14.....	45.08	124	60.22	165	209.25	573	1,591,621	4,361
1914-15.....	43.05	118	63.42	174	193.42	530	1,560,326	4,275
1915-16.....	44.48	122	61.22	168	200.48	549	1,574,621	4,314
1916-17.....	43.01	118	62.45	171	189.94	520	1,536,833	4,211
1917-18.....	43.14	118	62.47	171	195.34	535	1,559,661	4,273
Average, whole period.....	43.91	120	61.78	169	197.45	541	1,565,075	4,288
Average, 1911-12 to 1916-17.....	44.05	121	61.65	169	197.82	542	1,566,032	4,290

tional point of view, it seems probable that of the protein in human foods left in the country for consumption in the statistical sense, it is safe to say that 5 per cent is lost in edible wastage; of the fat left in the country for consumption as human food, it is believed that at least 25 per cent is lost through wastage. This figure seems large, but it probably under-estimates rather than over-estimates the fact. Of the carbohydrates, probably there is 20 per cent of edible wastage.

Applying the estimated percentage deductions for edible wastage stated above to the per capita average for the whole period we have the following results for ingested human food:

114 grams protein per man per day
127 grams fat per man per day
433 grams carbohydrate per man per day
3424 calories per man per day

These figures are probably very close to the fact as regards protein and carbohydrate. They are perhaps somewhat too high still as regards fat, because the edible wastage of this component is higher than the 25 per cent used. The intention, however, has been to use the most conservative figures in estimating waste.

The stability of food consumption, in physiological units, one year with another is one of the striking things brought out by Table II. People consume about the same total amount year in and year out, so far as we may judge both from common experience and from careful statistical study. This stability of consumption is shown graphically in Figure 1.

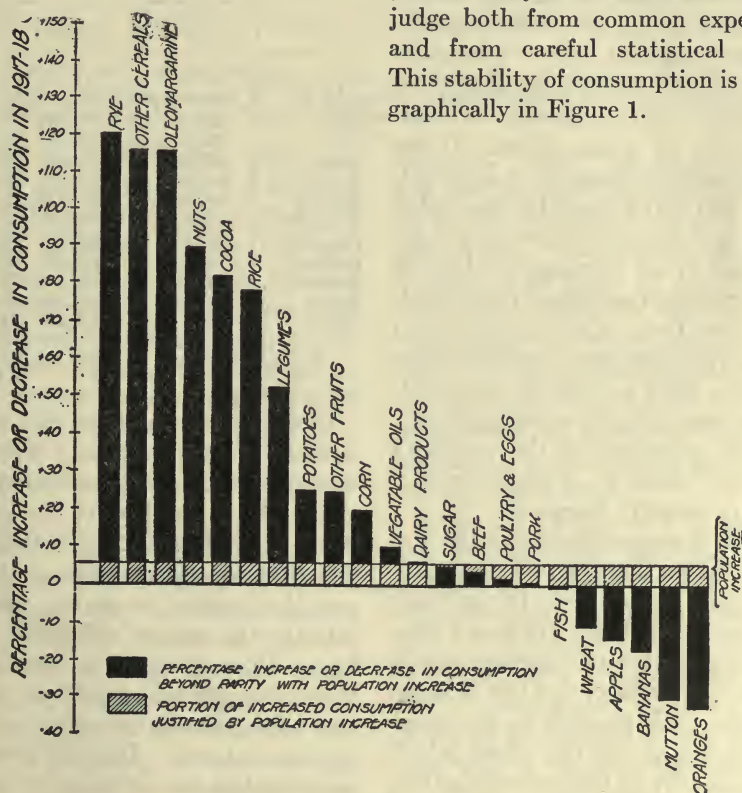


FIG. 1. DIAGRAM SHOWING THE ENERGY VALUE IN CALORIES OF THE GROSS CONSUMPTION OF HUMAN FOOD, PER ADULT MAN PER DAY

REDUCTION OF FOOD BILL BY THRIFT

It has been pointed out above that in the consumption calculations deductions were made for inedible refuse, for loss by spoilage, in transportation, storage, etc. Specifically these deductions included the following classes:

- (a) Loss of commodity in storage
- (b) Spoilage of commodity in storage
- (c) Loss of commodity in transit
- (d) Spoilage of commodity in transit
- (e) Loss by vermin
- (f) Amount fed to livestock
- (g) Amount used for technical, non-food purposes, including the manufacture of alcoholic beverages
- (h) Inedible refuse

From the viewpoint of thrift, rather than that of pure statistics, it must be remembered with the utmost clarity and precision, that the consuming public *pays for all these losses*. The prices of the commodities actually bought by the public include in themselves an allowance for all of these items. In the case of inedible refuse this is apparent. One knows that he pays for the rind of a watermelon, or the bone in a ham. He is not so apt to remember that he pays for the corn and wheat the rats eat.

So here, then, in items (a) to (g) above, is the first clearly marked place at which, from a national viewpoint, the practice of thrift would inevitably effect a reduction in the country's food bill, which in absolute amount would be literally enormous.

Again, it was pointed out in the preceding section that after all the deductions under items (a) to (h) inclusive had been made, there still was a large amount of *edible* waste thrown away in the form of garbage, and lost in cooking, etc. It is possible to give some definite figures on the effect which thrift can have on the reduction of this edible wastage. In the summer of 1917 Mr. Herbert Hoover, working through the organization he had built

up, which was later to become the United States Food Administration, organized a nation-wide campaign to urge people to avoid waste in the preparation and use of food. In order to check up on the effectiveness of this campaign statistics⁴ were collected from 96 cities monthly, giving the amount of the collection for each month in 1917-18, while the conservation campaign was on, and the corresponding month in 1916-17, before any conservation was practiced. The summarized totals are exhibited in Table III.

TABLE III
Total Tons of Garbage Collected in 96 Cities, by Months, May 1916 to April 1918

	Garbage Collected (Tons)		
	1917-18	1916-17	Relative
May	191,129.06	226,066.56	85
June	209,937.90	230,724.72	91
July	233,853.45	245,198.66	95
August	265,409.63	278,948.91	95
September . .	241,317.59	258,751.64	93
October	220,943.29	234,148.73	94
November . . .	190,012.89	209,090.07	91
December . . .	170,391.67	200,067.75	85
January	156,711.35	200,096.45	78
February . . .	148,735.15	167,391.84	89
March	177,392.25	181,306.00	98
April	183,119.69	177,342.50	103
Totals	2,388,931.92	2,609,133.83	92

It will be seen at once that a substantial reduction in amount of garbage was effected simply by voluntary care and thrift on the part of the people. But even more remarkable than this quantitative saving, great as it was, was the qualitative saving, as indicated by the amount of fat in the garbage. In a number of large cities there are garbage reduction plants, where the grease is extracted from the garbage and sold. Table IV gives the results in this particular for 12 cities.

⁴ Pearl, R. *Statistics of Garbage Collection and Garbage Grease Recovery in American Cities*. Jour. Ind. Eng. Chem., Vol. 10, p. 927, 1918.

TABLE IV

Tons of Garbage Grease Recovered in 12 Cities for the Two Years, May 1917 to April 1918 and May 1916 to April 1917

City	Population	Tons of Garbage		Tons of Grease Recovered			Percentage of Grease		
		May 1917-Apr. 1918	May 1916-Apr. 1917	May 1917-Apr. 1918	May 1916-Apr. 1917	Relative Figure	May 1917-Apr. 1918	May 1916-Apr. 1917	Relative Figure ^b
Boston, Mass.....	781,628 ^a	46,335	52,650	1,401	2,140	65	3.02	4.06	74
Buffalo, N. Y.....	468,558	15,382	21,817	314	494	63	2.03	2.26	90
Chicago, Ill.....	2,497,722	93,235	124,496	1,656	2,869	58	1.77	2.30	77
Cleveland, Ohio.....	674,073	55,466	59,708	1,415	1,821	78	2.55	3.05	84
Columbus, Ohio.....	220,000 ^a	17,295	20,393	354	639	55	2.04	3.13	65
Dayton, Ohio.....	155,000 ^a	15,677	16,621	250	355	70	1.59	2.13	75
Indianapolis, Ind.....	271,758	19,929	23,267	454	793	57	2.27	3.40	67
New Bedford, Mass....	118,158	8,774	10,162	199	270	74	2.26	2.65	85
Pittsburgh, Pa.....	579,090	72,612	73,758	1,554	2,117	73	2.14	2.87	75
Philadelphia, Pa.....	1,709,518	114,160	101,678	1,178	1,161	101	1.03	1.14	90
Schenectady, N. Y....	105,000	4,111	4,419	84	91	93	2.04	2.04	100
Wilmington, Del.....	94,265	18,986	14,187	49	92	53	0.25	0.65	38
Totals.....	7,684,771	481,962	523,156	8,906	12,843	70	1.85	2.45	76

^a Population, 1918. ^b Relative figure expressing the monthly collection for 1917-18 as a percentage of that of the same month of 1916-17; that is, relative figures under 100 mean smaller collections and figures over 100 mean larger collections.

Tables III and IV make plain in a concrete way what thrift can do on a large scale. A reduction of about 10 per cent in the gross tonnage of garbage, and of 30 per cent in the tonnage of fat recovered can only have been accomplished by a real and widespread saving and utilization of food materials which ordinarily go into the garbage can.

GENERAL STABILITY OF FOOD CONSUMPTION

Table II and Figure 1 indicate how difficult, not to say impossible, it would be to lower by any substantial amount the gross total food intake of a nation's population, so long as there is an abundance available. The experience of every country in the war shows that despite regulations, however drastic, and propaganda for voluntary reduction of the intake, people will eat just about the same total amount, *if they*

can get it. They *can* be induced to stop wasting, and to save edible material which would otherwise go into the garbage can. Also, if there is an actual shortage of all foods, as was the case in Germany during the war, the total calory intake will be perforce reduced. But in the presence of plenty all experience goes to show that the food consumption of any nation, per capita of population, is exceedingly stable over long periods of time.

From the standpoint of true thrift it is desirable that such stability of consumption should obtain. The human body is a machine. Food is its fuel. If the machine is to maintain a given output of energy it must consume a given proper amount of fuel. To try to make the machine perform on a reduced fuel consumption, below the level which human experience through centuries has shown to be the optimum for efficient performance,

would be the height of folly, so long as adequate supplies are available. The human machine is so delicately organized that there is every reason to believe that if the nation's total calory intake were to be reduced by so small an amount as 10, or even 5, per cent over a period of months the results would be promptly apparent in increased mortality rates, diminished output of industry, and greatly increased morbidity.

The points which were stressed in Mr. Hoover's Food Administration conservation campaign seem to point the way to true and sound food thrift more wisely and justly than has ever

been done before. These points were essentially:

1. *General conservation*, by the elimination of waste of edible materials wherever and however possible. The effectiveness of this has been demonstrated by the garbage figures, to take but a single instance. Many others might be given.

2. *Special conservation*, by substitution of one food material for another which it was desired to save for essentially military purposes. This was the method taken to conserve a short wheat supply.

The effectiveness of this special conservation is well shown in Figure 2.

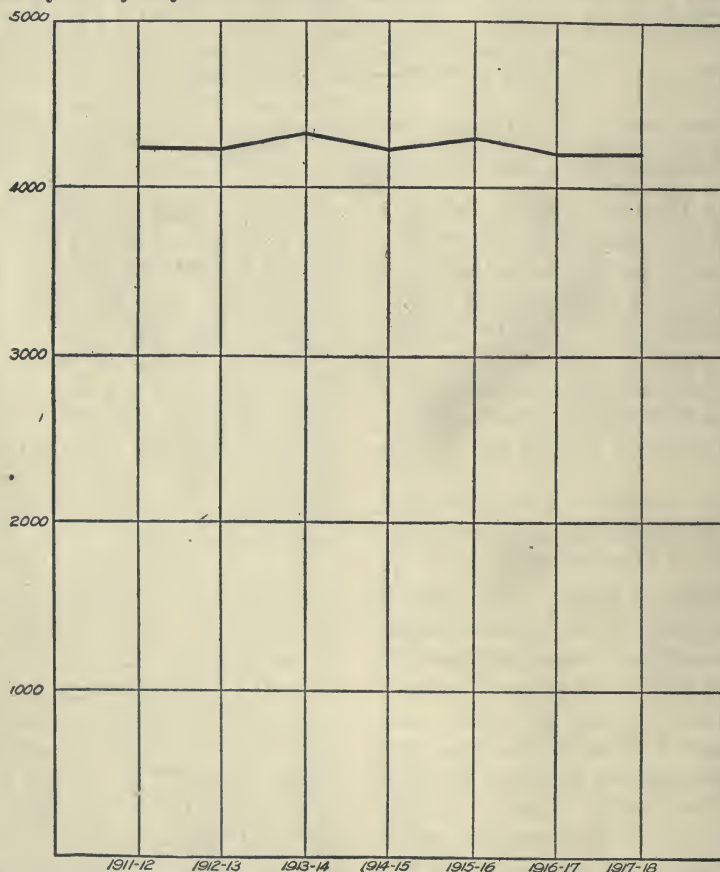


FIG. 2. SHOWING THE PERCENTAGE INCREASE OR DECREASE IN CONSUMPTION IN 1917-18 AS COMPARED WITH THE ANNUAL AVERAGE OF THE SIX YEARS PRECEDING. FOR EXPLANATION SEE TEXT

In this diagram the total length of the bars from the 0 line shows the total percentage increase or decrease in consumption in 1917-18 as compared with the preceding six years. The cross-hatched portion of each bar shows the percentage increase in population, and therefore the part of the increased consumption to be expected as a result of population increase. Where the black bar is below the top of the cross-hatched population bar it means a conservation. Thus the true conservation on wheat amounted to $10.80 + 5.73 = 16.53$ per cent of the normal average consumption.

It will be noted at once that the commodities showing great increases in consumption in 1917-18 over the preceding years are, for the most part, those which the Food Administration urged to be substituted for articles of which the supply was less abundant, and for which the needs of the Allies were greater. Thus, rye, which constituted the most popular of the substitutes for wheat in the public mind, shows the greatest increased consumption in 1917-18. Next to it stands the "Other cereals" of our classification, including barley and buckwheat. Nuts, rice and the vegetables generally show increases beyond the population increase, showing that the people very generally followed the suggestions of the Food Administration to consume more of these products and save wheat. The articles on which the Food Administration most strongly urged conservation—namely, wheat, beef, mutton, pork, and the sugars—all show either a consumption actually below the normal average, or else a very slight absolute increase well below the population percentage increase. In either case a real and substantial con-

servation is, of course, shown. The decrease in consumption of the most popular fruits, oranges, apples, and bananas is largely if not entirely explained by high prices for these products.

The health and efficiency of the American people did not suffer in the slightest degree from these food substitutions. There is no reason why the same method cannot be voluntarily applied by the people in peace as well as in war, and for economic as well as military motives. During the past summer I have had the privilege of visiting and talking over the economic situation with a considerable number of the largest manufacturers of all kinds of food products, from the Atlantic to the Pacific Coast. The outstanding general result of this experience, to which the supporting testimony was virtually unanimous, was that the demand for the highest grade of fancy products, put up in the most expensive way in the most costly packages, was greater than could be supplied; while on the other hand, standard grades of which the food value was just as great, but the price lower, were difficult to dispose of. And yet during this very period there was great public clamor, coupled with activity about equally furious and futile on the part of our legislators, regarding the high cost of living in general and of food in particular. It costs a manufacturer a definite and substantial excess amount to produce a highly fancy food product. But the product contains no more protein, or fat, or carbohydrate, or calories than does a standard article (sometimes indeed less), nor is the fancy grade any more sanitary, broadly speaking. Yet people are loath to buy any food except what they call

TABLE V
Cost of Food in Relation to Its Energy Value

Order	Commodity	Average Retail Price per Lb. (Cents)	Relative Cost of 100 Calories, Bread Being Taken as 100		
			Oct. 1 1918	Sept. 1 1918	Aug. 1 1918
1	Cornmeal	7.05	52	51	51
2	Flour, graham	7.2	53	53	51
3	“ wheat	7.3	54	54	53
4	“ rye	7.2	54	56	54
5	Oats, rolled	8.4	55	57	52
6	Flour, barley	7.9	57	59	59
7	“ corn	8.1	59	57	56
8	Hominy grits	9.1	67	67	65
9	Sugar, granulated	10.4	68	62	61
10	Sirup, corn	8.6	71	72	68
11	Flour, buckwheat	11.2	82	80	73
12	“ rice	13.4	95	91	89
13	Barley, pearled	13.2	97	96	85
14	Bread	9.9	100	100	100
15	Lard, pure leaf	34.9	102	97	95
16	Rice, fancy head	13.7	103	100	96
17	Oil, cottonseed	34.7	104	114	106
18	Macaroni (bulk)	15.0	110	109	104
19	Oil, corn	37.6	113	123	103
20	Beans, navy	16.9	123	113	117
21	Oleomargarine	37.1	130	124	122
22	Raisins, seeded	15.6	133	130	128
23	Crackers, oatmeal	21.6	134	142	141
24	“ graham	21.7	136	144	139
25	Potatoes, white	3.73	143	151	149
26	Cocoa (bulk)	33.7	179	161	166
27	Prunes, medium	17.5	180	175	169
28	Peaches, evaporated	18.9	188	183	167
29	Apples, “	20.8	188	192	180
30	Potatoes, sweet	7.1	188	225	236
31	Cheese, American Cheddar	37.5	215	203	195
32	Butter, creamery	63.5	217	184	176
33	Milk	6.85	264	248	245
34	Honey, comb	33.7	272	243	240
35	Onions	5.2	310	340	336
36	Ham, sliced	51.4	323	306	293
37	Mackerel, salt	27.3	326	305	309
38	Oil, Italian olive	110.0	328	324	295
39	Corn, canned	14.88	403	388	375
40	Pork chops	43.5	422	389	366
41	Leg of mutton	35.3	484	487	473
42	Salmon, Red Alaska canned	30.8	557	548	537
43	Salmon, fresh	32.4	604	611	546
44	Beef, round steak	38.1	699	692	681
45	Peas, canned	15.04	718	699	675
46	Eggs, fresh gathered	36.2	720	635	586
47	Halibut steak	32.3	856	864	782
48	Peaches, canned	15.9	903	903	793
49	Cod, salt	27.6	915	955	839
50	White fish	26.2	977	962	837
51	Tomatoes, canned	14.0	1,671	1,623	1,582
52	Beans, string, canned	15.7	2,082	2,015	1,705

the "best." A point which wants emphasizing is that thrift, like Boston, is a state of mind.

FOOD IN RELATION TO ENERGY VALUE

To give point and direction to thoughts similar to those expressed in the preceding section it was the writer's custom during his connection with the Food Administration to issue monthly a typewritten bulletin, to members of the organization for publicity use, having the title "Cost of Food in Relation to Its Energy Value." A sample table from one of these bulletins (that for October 1, 1918) is reproduced here as Table V. The table gives the relative cost of 100 calories obtainable from various foods at the average retail price prevailing in the United States on the dates named,

Such tables as this can be prepared very simply and easily by anyone with an elementary grasp of arithmetic. They should form one of the essential bases and guides of food thrift. Canned string beans no doubt have their place in the dietary of the rich,

but it is difficult to see what place they have in the practice of food thrift.

PREREQUISITES TO PRACTICE OF THRIFT

By way of summary it may be said that in the opinion of the writer preaching the virtues of thrift is much like any other sort of preaching, a sadly thankless and ineffective task. What I have tried to do in this paper, in lieu of exhortation, is to present some basic facts about the physiology and economics of food, and to point out how any people thriftily minded may reduce their national food bill much below what ours is and suffer no evil consequences, but only good. The way lies along two lines, which are: First, reduction of avoidable waste of food at every stage from the farmer's field to the consumer's stomach; and second, the substitution of cheap foods, physiologically just as nourishing, for dear foods. But first of all, and all the time, it is a prerequisite to the practice of thrift, that the people be thriftily minded.

The Garbage Pail, a National Thrift Barometer

By H. L. BALDENSPERGER

Sometime Executive Officer, Salvage Division of United States Army and also Member of War Prison Labor and National Waste Reclamation Section, War Industries Board

THE city dump is no respecter of persons. It reveals the inefficiencies of our industrial and communal organizations. It serves as a measure of the efficacy of our thrift movements. Thrift was the war-time slogan; the government bent every energy to induce us to save. The influence of this campaign was registered in the city dump. A study of the municipal reports covering the years 1917-18 will show a remarkable decline in the amount of waste handled by the city agencies but these same reports reveal the lack of permanent influence of this campaign. The amount of garbage handled in our larger centers in November, 1918, increased from 10 to 25 per cent over the amount of material handled in the previous month. It was not necessary to consult the news dispatches to ascertain that hostilities had ceased,—the garbage pail revealed that fact.

Here is a measure of the effectiveness of our movements for organized thrift. We may theorize about savings, we may develop programs for increasing individual and social thrift but it is to the city dump that we must look to secure the data by which our program can be made effective.

GARBAGE RECLAMATION IN THE ARMY

One is tempted to say that garbage won the war. Not because it contains matter essential to the manufacture of munitions, not because it is the chief supply of glycerin upon which the success of any military program de-

pends, but because it checked food waste in the Army and became a safeguard of the efficiency and morale of our men.

It is true that few Army officers recognized that fact; it is doubtful if many would agree even in the face of the evidence because the average official of the War Department like the average citizen looks upon garbage as a nuisance, as a loathsome thing which must be put out of sight and mind once and for all time.

Garbage in the early days of the war was more than a nuisance to the War Department; it was a bug-bear. Every system of disposal was open to severe criticism. Incineration was destructive of valuable by-products and fuel. The method of sale to contractors in bulk was inefficient. The government did not receive an adequate return for the waste, and valuable material with glycerin content was being disposed of for stock feeding purposes.

It remained for an officer of the British Army, assigned to our government to assist in our reclamation work, to develop the true function of garbage. Col. Sir Frank B. Beauchamp adapted the British system to our needs and through the initiative and foresight of Col. John S. Fair, Assistant to the Acting Quartermaster General, saw it put into successful operation in this country. Under this plan each unit of the Army conducting a mess was compelled to keep a six-fold classification of its table waste.

This material as segregated was collected daily by the salvage corps, weighed and the proper records covering the weight of each class was checked against the separate units.

The daily tally sheet was the index to the kitchen efficiency of the various units of the division. It became a danger signal in many instances because a high percentage of waste meant one of two things, over-feeding or poorly prepared food. Efficiency and morale were affected by either situation; valuable food was being consumed to no purpose. The salvage officer by consulting this tally chart was enabled to locate the danger points at once. A hurried but heated interview with the mess sergeant and a rapid transfer of kitchen personnel to the School for Bakers and Cooks was the usual means of dealing with the situation. Garbage became the terror of the inefficient,—the camp inspector worked unceasingly and untiringly.

This system increased the revenue derived from the sale of the waste material; it checked the loss of valuable by-products but its true value lay in the fact that it revealed the points of inefficiency. It indicated those centers where additional education and training were needed.

GARBAGE AND INSTITUTIONAL EFFICIENCY

Society needs some such measure to check the efficiency of its social institutions. It must utilize its garbage pail, its city dump and its institutions to determine if it has in reality adopted thrift, if it is utilizing its material and man power effectively. The success of this system in the Army lies in the fact that the men were under social control. There is a portion of our people equaling in number the forces

called to the colors who are under the same system of control. Our institutional population is maintained under a somewhat similar system of centralized authority. Is it not time to look at our institutional garbage pails in order to check the efficiency of our institutional kitchens?

Our government put a similar system of check into operation at a federal institution. The War Prison Labor and National Waste Reclamation Section of the War Industries Board issued an outline of this system and had it adopted at a naval prison. Other institutions under the control of the federal government were to adopt this plan when the armistice suspended the operation of the War Industries Board. As a result of this suspension of activity the other federal institutions are pursuing the old policy of dealing with garbage as a nuisance and our state institutions are following a similar policy. H. C. Wright, in his *Fiscal Control of State Institutions*, reports but three as having such a system of checking the efficiency of the kitchen. It is time for our institutions to benefit by the experience of the War Department and through State Board of Charities or similar bodies to establish some such system of measurement, some method of utilizing their garbage as a measure of the efficiency of the management of the institution.

THE CITY DUMP

Our attitude is the same in regard to the other waste material we discard. We erect unsightly dumps as a monument to our inefficiency. We compile little or no data relative to the type or amount of material discarded by the community. We talk thrift while we bury in the dump arti-

cles with the potential value of millions. The war temporarily checked this tendency. The amount of secondary metals reclaimed in 1916 was more than 130 per cent of the amount returned to industry in the previous year. The amount of the heavy metals conserved and re-utilized increased about 75 per cent in the same period. Bear in mind the condition of the garbage pail following armistice day and you can readily depict the condition in regard to the city dump. We are again swinging back to pre-war conditions at our points for handling the waste of the community; we are again diverting needed labor to the extractive industries while we build ore dumps at the doors of our city.

THE WHITMAN PLAN

Our city dumps and our correctional institutions are the products of the type of thinking which attempts to solve a problem by ignoring it. We waste men and material because it requires time and effort to find the necessary solution. We lose our unsalvaged material, we waste our unadjusted man.

The Chicago House of Correction is an exception to this rule. John L. Whitman, sometime superintendent of that institution, inaugurated a system of employing the physically unfit man in handling the waste of the community which not only revealed the potential wealth which exists in the dump and in the waste man but also served as a basis of the government's war-time program for waste reclamation.

Under Whitman's plan of utilizing prison labor in handling the waste of the municipal departments, the inmates thus employed were enabled to make a return equal to four times their

cost of maintenance and were enabled to contribute a sum equal to 50 per cent of the cost of maintaining the institution. The material after being properly handled was sold for a sum 900 per cent more than was received for a similar amount when it was sold unsorted. Pieces of copper wire which had been thrown aside by the electrical department netted more than \$43,000, waste paper made a return of over \$4,000 while old rags saved from the garbage made a return of approximately \$4,000 and the platinum in the worn out electric light bulbs was found to be worth \$9,000. These figures, representative of the returns secured for various items of waste, are compiled from the financial statement for the year 1916,—a representative pre-war year in the waste trade.

ORGANIZED THRIFT IN THE ARMY

Whitman's system proved to be the solution of the two pressing problems which were facing the War Department in 1917. An establishment functioning with a machinery untested by war was proving unfit for the task. Waste was rampant. Such a situation was to be expected. A small staff working under archaic methods of handling material and with theories ill-adapted to the times was not only wasteful of material, it was also wasteful of man power. The rigid personnel system could not attempt to adjust the man who did not readily fit into the military machinery. He was either discharged as an "inept" or handled as a military misdemeanant. Either system meant the possible increase of institutional population, either civil or military and any addition to that class which is maintained in idleness meant a serious drain on the resources of this country.

This problem was referred to Mr. Hugh Frayne, General Organizer of the American Federation of Labor, who represented labor on the War Industries Board. Mr. Frayne was assisted by Mr. John J. Manning, also a member of the Federation and a deep student of the problems of prison employment, and also by the present writer. A plan was developed and submitted to the Board by Mr. Frayne. Whitman's plan was the basis of this program which called for the establishment of a central bureau in the War Department which was to have sole jurisdiction over worn material, this material to be repaired for re-issue or prepared for the market by labor companies which were to be composed of men unfitted for military service or by general prisoners and prisoners of war.

This plan was approved by the War Industries Board and forwarded to the War Department for consideration. The plan was put into effect in the early part of 1918 but with one serious defect,—no provisions were made concerning labor and as a result the Conservation Division could not function either as a reclamer of material or of men.

This defect was soon remedied. The Conservation Division was placed under the direct supervision of Col. John S. Fair who was largely responsible for the effective development of this feature of army administration, as well as the proper development of the remount and fuel and forage branches of the Quartermaster Corps. Col. Fair drafted and secured the passage of special regulations covering the reclamation activity of the Army and in these regulations he adopted the program of the War Prison Labor and National Waste Reclamation Section

of the War Industries Board. He provided for salvage companies which were to be composed of men unfit for line duty. These companies comprised those men who theretofore had been discharged as "inept" or who had fallen afoul of the military courts and had become military misdemeanants. Col. Fair also arranged for the utilization of prisoners of war, conscientious objectors and general prisoners in certain features of the salvage work. Thus, at one stroke was launched the greatest movement for organized thrift in the history of our army, a movement which decreased criminality, abolished idleness as a punishment for military offenses and made a monetary saving estimated at \$65,000,000.

UTILIZATION OF THE UNADJUSTED MAN

Broad powers were granted the Salvage Corps in the development of its work. It was authorized to develop agricultural, mineral and forest lands owned, purchased, or leased for the army. Under this provision Col. Fair in coöperation with the group of the War Industries Board responsible for the inception of this program developed a plan looking to the utilization of the socially unfit from the military standpoint. This plan would, doubtless, have blazed a new trail in the field of penology and would have assisted materially in developing a national waste conservation movement so essential to any scheme for organized thrift, but the armistice was signed before the program in its entirety could be put into effect.

The movement for the establishment of the camp gardens is a part of this program. Here again the basis of the program was the desire to utilize

the waste man. The opportunity to secure added food supplies from regions adjacent to the camp and the cultivation of idle lands were factors which received consideration but the primary reason was a desire to open additional avenues of useful employment to the unadjusted man under the control of the military group. Those of us who were instrumental in developing this program and putting it into effect did not consider the financial return, large though it was, as an index of the real function and success of this service. The number of men returned to the line, the amount of Liberty Bonds purchased by prisoners of war employed at a small wage on these camp farms served as our measure of the effectiveness of these newer ideas of thrift.

The War Prison Labor and National Waste Reclamation Section was instrumental in developing other systems of waste conservation which included the use of the unadjusted group. It is to this Board that the securing of the executive order permitting the use of state prisoners on federal work is to be attributed. Under this authority a large shoe repair shop operated under the supervision of the Salvage Corps was installed in the New Jersey State Prison at Trenton, N. J. Here with unskilled and untrained men the army developed its largest quasi-governmental shop which prepared for re-issue a thousand pairs of worn shoes daily.

This same section was responsible for the movement for the establishment of the Whitman plan in other centers and a number of communities organized their salvage work along the lines developed by this group. Unfortunately, the work of this sec-

tion ceased with the disbanding of the War Industries Board and, although the Department of Commerce assumed charge of the function, the movement was but short lived. Congress was busily at work saving pennies and losing dollars and refused the necessary funds for the continuation of the movement which would certainly have assisted materially in the development of a national system of thrift. Despite the fact that this section had but a short time to develop its program an examination of its records will show that in at least three cases prisoners were utilized to marked advantage in handling the waste of the community.

DISPOSAL OF ARMY SUPPLIES AFTER ARMISTICE

This section of the War Industries Board made one final contribution on the eve of its disbanding which has had far-reaching effect. The signing of the armistice found the Salvage Corps with hundreds of thousands of articles on hand waiting repair. The army had no further need for renovated material. Under such conditions this material would be sold and utilized in the manufacture of other articles. The members of this section of the War Industries Board pointed out that the wearing value of these articles should be conserved in their present form and proposed that the army sell this material to the states to be repaired by the inmates of the state institutions and utilized in maintenance work. The army accepted this plan and the machinery of administration was set up but in the legal tangles which ensued the opportunity for the development of this idea was lost. However, as a result, of the movement to put it into effect a ruling was secured which permitted the sale

of material to states and municipalities and upon that ruling the army developed its system of chain stores for disposal of army supplies.

MUNICIPAL WASTE PROBLEMS

There is a growing interest in the city dump. The experience of our government will, doubtless, have a marked effect in the future development of our municipal and industrial functions. We must realize how archaic and wasteful our methods are and what a social cost is entailed by their retention. Two groups have recently become interested in the question of the disposal of the city waste. Both groups attribute inefficiency and cost to the same factor; the same conclusion was reached in widely different fields of research and interest. Our present system of communal waste collection has developed a character who is the logical development of our present lack of policy in dealing with the waste of the community. The collector or junk man is looked upon as a social liability by the social worker and the city engineer.

The Junk Man

The cost of collecting the rubbish of the city is increased by the junk man. This fact is revealed by the recent research in this field. The city collection is slowed up by the fact that the city collector picks the valuable waste out of the litter. This means not only a loss of revenue but a greater loss in retardation of the collective service. Scavengers who pick the rubbish cans prior to the rounds of the collector increase the cost of collection by scattering the material. The city engineer has seen the problem but has not as yet offered a solution.

Juvenile Delinquency

The social worker has also indicted the junk man. He is charged with being the chief contributory factor in male juvenile delinquency. A superintendent of a correctional institution for juveniles, basing his contention on the record of three hundred commitments, claims that the junk business is primarily responsible for 90 per cent of the delinquencies. The Chicago Juvenile Protective Association made a thorough investigation of this question and reached the same conclusion. They found, in Chicago, where the system of utilizing prisoners in waste reclamation was first inaugurated, that the itinerant junk man was the chief cause for commitment to institutions for juvenile delinquents and often responsible for the first step in criminality which ended in the Chicago House of Correction, the center of the new system for dealing with city waste. This group proposed breaking this vicious circle by municipalization of the junk business and elimination by ordinance of the junk collector. It was argued that this would give added revenue to the city and eliminate a large amount of juvenile delinquency.

Waste by the Housewife

Again, the data covering the flow of material to the city dump can be used to show wherein this movement for municipalization would have little or no influence as an educational movement. As the conditions now stand the junk collector performs an economic service. He secures as large an amount of waste material as possible. To municipalize might mean a decrease in the amount conserved. A study of the waste handled by the

City of Rochester shows that the housewife is the real contributing factor in our present system of waste by the community. Due to her failure to make the proper segregation valuable waste commodities are being lost in the ash dump. It was estimated that with proper segregation, the amount of the waste material conserved at the city dump would be increased at least 30 per cent. Municipalization would not check this loss of valuable waste in the ash dump.

Sentiment, not law, will be the only effective measure for checking this present system of inefficiency. Patriotism became the driving force for conservation during the war. How effective this force was in comparison with the previous means for stimulating conservation in pre-war days can best be measured by a reference to the increasing material handled during the war and the decline in the amount of material sent to the city dumps. We need a similar force in the days of peace if we are to increase the amount of waste material which will be conserved and sent back into the channels of consumption. The answer to this problem, doubtless, lies in a system of coöperative waste saving such as that which was launched by the government and put into operation in Akron, Ohio.

COÖPERATIVE WASTE SAVING

The program for an incorporated community waste saving scheme was fostered by the War Prison Labor and National Waste Reclamation Section and was put into successful operation by George W. Sherman, Salvage Manager of the B. F. Goodrich Co., Akron, Ohio.

This system will not only check waste in the home, it will assist con-

servation in industry. By this system a factory or store with small volume of waste can have it handled at the same cost per pound and will receive the same revenue per pound as an industry with a large turn-over. By this system it would be possible to check the distribution of material, which, heretofore, has been impossible due to the excessive cost of handling small accumulations of waste material, and will inculcate ideas of thrift by demonstrating the added value which accrues with increased accumulation and proper assorting of the waste material.

Space does not permit a discussion of the details of this system. The Department of Commerce has investigated this movement and reported upon its successful operation in a publication known as the *Akron Industrial Salvage Company,—A Community Incorporated Waste Saving Experiment*. In it will be found interesting data covering the cost of operation, the financial return and the future developments of the work.

But one feature should be mentioned here. That is the system of collecting the waste paper from the public schools and applying the net proceeds for playground work; and the collection of the waste of the home for furthering the welfare work of the community. In this program, doubtless, lies the answer to the problem of finding a new force to intensify savings, a new community driving power similar to patriotism to force the individual to save material for the benefit of others.

The Board of Managers of the Chicago House of Correction, in the annual report for the year 1918, discussed the salvage work of the institution and stated that the present returns could not be continued indefinitely due to the

fact that in the early stages of the movement the institution uncovered the accumulation of years in the various city departments, that they could not hope to secure the same amount each year due to the fact that the separate departments were certain to sell the material direct to the dealer.

In this naïve statement is revealed the administrative attitude towards waste material and the proper development of the functions and machinery for securing an adequate return from its disposal. Experience had given them a measure which would have enabled them to force through a program for centralized control over the waste of the city, a system which has been successfully adopted by the army salvage movement.

This attitude of mind on the part of the officials shows the weakness of municipalization and the strength of the Akron plan. A coöperative company working on the lines of a commercial concern will be enabled to secure such convincing data as to the waste of the municipal de-

partments and the homes that it will be enabled not only to increase the revenue from the waste but also to decrease the amount of waste in the community.

Thrift is paramount but habits of thrift cannot be inculcated by precept. Modern society has left little for the initiative of the individual. Group action is the basis of our modern communal life. Our thrift movements, heretofore, have depended upon individual initiative. In order to have our thrift movement conform with modern social conditions it is necessary to organize for communal action. We must throw the emphasis on spending rather than on saving and develop methods of measuring the effectiveness of our system of expenditures so that we can secure the maximum return for the dollar spent by the community. We must develop some system of measurement similar to the system utilized by the army to force efficiency upon the group. We need to utilize our garbage pails as barometers of the national thrift movement.

The Function of Salvage in the Education of Industrial Workers

By GEORGE W. SHERMAN

President, Akron Industrial Salvage Co. Formerly, Manager of Salvage Department of The B. F. Goodrich Rubber Co.

POSSIBILITIES OF WASTE RECLAMATION

MODERN industrial salvage methods have been developed by a pressing need to dispose of large volumes of material in the best and most economical method. The education of the industrial worker was no factor in the inception of the plans and I may say, without fear of contradiction, that it was no factor in their development and is today no deliberate factor in most of the plants that have developed this subject. The problem of finding uses for a constantly changing group of materials flowing overwhelmingly down upon a Salvage Department, generally crowded as to space and hampered by lack of equipment and labor, is as fascinating and engrossing as it is overwhelming, and the fact that these activities have served a purpose in the education of workers has been purely incidental and fortunate rather than deliberate. The later phases of this development whereby great values are produced from most unpromising sources is strictly a cold-blooded business proposition, but it has nevertheless fostered the educational feature which has been of more value than any other incidental result.

There is no line of activity calling for more keen or brilliant imagination of a practical type than the making of something from nothing; the multiplying of values by sorting, grading, cleaning, or by ingenious mechanical or chemical contrivances and simple man-

ufacturing operations. The men and women who live their industrial lives close to these problems sense this fact and develop remarkable ability and skill in conceiving and carrying out manipulations, in planning new uses for materials, or in reducing costs or improving quality. The incentive for this type of service consists in the opportunity to apply it. In most staple manufacturing it is very difficult to get changes made, because of the large investment in equipment and because of the inertia of an established process. In salvage work nothing is fixed or permanent and one is always privileged to test out in a crude way any dream he may have for the improvement of anything.

POPULAR ATTITUDE TOWARD WASTE

But I am forgetting that many of my readers do not know of modern industrial salvage methods, and that the sole point of view of most of them may be outlined as follows:

Get rid of it!
Throw it away!
Send it to the dump!
Burn it up!
Chuck it in the garbage or ash can!

OR

Sell it to the "junk man," if he'll buy!
Phone the Salvation Army to send for it, if they want it!
Take it to the United Charities, if it fits their needs!
Give it to the first Rummage Sale that asks for it!
Pass it on to your own pet charity!
Have a sale at your home!

Pay a teamster to clean up and haul it away!
Or, dispose of it in any one of a hundred other
ways that will immediately occur to you!

Then you rest content that a nuisance has been eliminated, that your house, or office, or store, or factory, or school is spick and span and that the way is clear for real business to proceed in the home, the office, the store, the factory or the school. Let me change the pronoun from *you* to *we*. For I, myself, do all these things at times, even though it is my business to do somewhat differently and even though I know that the waste problem can be better solved than it is. Again, let us change the pronoun from *you* to *we* because I am seeking your aid and coöperation in finding and applying the program which will advance this problem toward a better solution.

WASTE RECLAMATION AN ESSENTIAL ACTIVITY

There seems to be a difference of opinion as to the Biblical text that promises the eternal presence of "the poor," but no one will disagree with the maxim that waste is an essential of all physical activities. I use the term "waste" here in the broad sense, covering unavoidable trimmings, scraps, garbage, ashes, paper, junk, etc., as well as similar items produced by carelessness. This acknowledgment establishes an essential feature for the consideration of the subject as an important, essential activity, because it is permanent to the extent of always being present. Not only is this problem always present, and always will be present, but with all humility each new student in this line must admit it always has been present.

And in spite of the fact that each new student, each new recruit, each organization conducting a campaign, feels

sure that their little effort to use the junk pile is a pioneer discovery, if not of the pile itself, at least of a general panacea for the solution of the waste problem, it is obvious that we are dealing with a problem as old as the universe, and although history has not devoted a great deal of space to the subject as a separate entity, reference to it is frequent, showing that much study has been expended through the ages in solving the problems of waste. Lazarus lived on the crumbs that fell from the rich man's table; Ruth gleaned the wheat left in the field by the harvesters; Dickens tells of the fortune made by the dustman in *Our Mutual Friend*; the close economies of the people of France, which have become traditional, involve countless solutions of the problems of waste; many of the fortunes of our own country were built on the business of the itinerant tin peddler who bartered his wares for old rags, metal, bottles, etc., and at the same time bartered the news of the countryside for other wares of the same class; the humble, diligent, often despised "junka-man" of the backyards and alleys of the city solves many of the specific phases of our problem; and the magnates of the waste trade, their business often growing from these same humble sources, have devoted their lives to the furthering of the same investigation. And who can tell the countless garments made over by the mothers of the world for another use or for the next smaller member of the family. And so it must be with due humility that we presume to do better or to do more or even to do differently in this line than the accumulated wisdom of all time has done.

EDUCATIONAL ASPECTS

We must know then: (1) What has

been done? (2) In what ways does past accomplishment fall short? (3) What can we suggest to overcome or to lessen these shortcomings?

What has been done? Specific problems have been solved, and often well solved, by the millions.

Specialists have concentrated keen minds, wide experience, limitless funds and comprehensive business organizations on the problem of making money on special items or groups of items, and incidentally have advanced the state of the art as always happens under such circumstances.

Municipalities, state and national governments have investigated, reported and in many cases acted on the reports of certain phases of waste. Government activities, however, except possibly in war emergency, have approached the problem mostly from a mere housecleaning standpoint.

Manufacturers have faced and solved countless problems of valueless tonnage and have produced a vast increase in value.

In what ways does past accomplishment fall short? (1) In the solving of specific problems only without a recognition that general basic principles apply to the whole subject and form a legitimate field for a general specialist.

(2) In the failure to solve, as a part of the general problem, the features which apparently do not pay and leaving the them as a housecleaning nuisance.

(3) In the failure of the present business specialist to recognize that his business lacks permanence due to his narrow field. His very success in increasing the number of uses for an item or in improving its value, gradually cut down the margin as this knowledge becomes more and more general.

If, therefore, he confines himself to

too narrow a group, he will inevitably work himself out of his business. Also, in the constantly changing methods of manufacture, the identity, shape, color, chemical or physical characteristics of the waste changes frequently. The business built up on one item or type of waste may last for only a comparatively short time and then disappear with the disappearance of that item of waste.

(4) In the wrong psychological attitude toward the whole subject. Waste is a discard from some physical activity and we are all looking backward from the standpoint of that activity insofar as we consider the subject at all.

We use too readily the terms waste, trash, scrap, swill, garbage, junk and similar terms of contempt.

What can we suggest to overcome or to lessen these shortcomings? We¹ can combine large groups of waste producers, either coöperatively, or as contributors or customers of a general organization, to handle all types of waste produced or used by the group. Thus we can gain sufficient tonnage of all important items to allow of proper grading, marketing and shipping, even though none of the contributors may have enough by himself to warrant him in even saving those items.

We gain, on account of the volume of the combined business, an organization, plant and equipment for economical handling, wise storage and manipulation, proper grading and in some cases manufacturing, as well as experimental research and development work which would not be warranted in the case of most of the contributors.

¹ A successful experiment along this line is now thriving in Akron, Ohio, in the work of the Akron Industrial Salvage Company, of which Mr. Sherman is president.

We gain a stability not available to the narrow specialist, due to the fact that the handicaps of some line, from time to time, are counterbalanced by the unusual advantages of some other lines.

We conserve values that are now being lost because there is no proper and comprehensive mechanism available for them all.

We gain such a multitude of problems that we can always grow, even though our solutions of former problems do react and cut down the margin of profit as the improvement becomes general knowledge.

We can eliminate the housecleaning feature for our government because we have taken all wastes and have, therefore, left nothing behind.

It is well to note here that no organization can properly solve all these problems, but the plan outlined can handle everything in some way and reduce to a minimum the items and quantities which have to be thrown away or destroyed because no solution has been found.

We can, and this is the large basic feature on which the whole program rests, produce a different psychological attitude on the part of all of us toward this subject by encouraging and popularizing the use of the words salvage, reclamation, conservation and other aristocrats of the scrap dictionary which imply the saving or conversion of lost material into legitimate merchandise.

We can take the subject seriously and realize that: "Nothing useless is or low." But, principally we must learn to think always of the next man along the line, to put ourselves in his place and to look at our wastes not backward as a discard to be gotten rid of and forgotten, but for-

ward from the standpoint of the consumer to whom they are raw materials.

When this point is gained it will be immediately realized that these raw materials are of greater value, if properly graded as to condition, size, quality, etc., and particularly as to freedom from dirt or other foreign material or from damage by moisture, grease, oil, unnecessary cutting, etc., than if mishandled in any of these or other ways. This point of view must be universal and its application must become habitual to get the best and maximum results.

The people actually producing the waste, whether metal chips, or cloth trimmings, or scrap paper, or garbage from home or restaurant, or rubber trimmings, or oil from machinery, or empty barrels, or tin foil from about a package, or foundry dross, or tin cans, or bottles, or feathers, or any other of the countless items which reach the waste channels of the country, must have this point of view and the habit of so handling these items as to preserve the greatest value possible for the industry waiting for them as raw materials.

The foremen and the management of factories where these people produce the waste materials must have this point of view and habit of thought so that they will supply to their work people the necessary facilities to make it convenient to preserve waste values. And in general everybody must do likewise. Thus we have developed, either as salvage departments in large factories, or as coöperative companies, a business program for getting maximum values out of waste.

Reference has been made to a few of the educational influences affecting the people actually handling the materials.

INSPIRATIONAL INFLUENCES

Let us see now what other influences there are and what other groups are affected by any of these influences.

There is the influence of a large volume of business forcing attention and respect and reacting to a scrutiny of the wastes controlled by the observer or his company.

There is the influence of money made by the handling of wastes properly over and above that made by the usual house-cleaning attitude. This arouses interest and enthusiasm over the prospect that the observer may share this money by handling his own waste products in the same way.

There is the influence of the objection of all normal mature minds to deliberate waste. These minds condone and even endorse wasteful methods because "familiarity breeds contempt," and because no adequate or better method of solving a pressing problem of waste disposal has been brought to their attention. But when a new or better method is available, this normal objection to waste awakens from its sleep and strives to equal, eliminate or surpass the program presented.

There is the influence of interest in anything new, of instinctive wonder at the simplicity of a process or machine seen for the first time, and of a wish to try it out or to improve upon it and in general to utilize the inventive faculty more or less dormant in the average mind.

There is the influence of order and cleanliness which is an important feature of the programs described above and whose impression is deeper because of the unusual diffi-

culty of keeping materials of this nature clean and orderly.

There is a tendency to coöperation between the management and the organization handling these materials because no part of the group can get very far away from physical handling without losing touch with the life of the business. This is so, because of the continually changing type, condition and variety of the items. Thus the organization is and must be interested in all of its problems. The company's officers, foremen, clerks and workers, are allowed in on any and all discussions of physical problems and the nucleus of the solution is just as likely to come from the most humble worker as from the superintendent, manager or president. This working together produces harmony and a spirit of team work and pride in the company or department that is invaluable.

These influences and others along the same line can all be grouped under the head of inspirational influences. They are all breeders of enthusiasm.

No system of education gets anywhere without the interest and enthusiasm of the teacher and pupil. Knowledge is most effective, permanent and valuable when acquired unconsciously, incidental to the handling of normal obviously necessary work or problems, rather than deliberately, as it seems to be necessary to acquire most book learning. The modern handling of salvage problems does not necessarily teach details or facts or rules, but it does arouse the interest, enthusiasm, imagination and inventive faculties of the entire organization concerned in the work from top to bottom.

And right here let me say that this

type of education is sometimes most sorely needed at the so-called top of the organization as well as at the bottom and in the middle. We must not overlook our obligation to the poor abused capitalist and officials while we are offering the best we have to our masters who work mostly with their hands. These same influences expand and have their inspirational effect on the departments delivering material to or getting material from a salvage department; on the companies or individuals supplying wastes to or buying products from the salvage company; and on the waste specialists, whose very success is built on keeping awake and learning wherever learning is to be had.

But, you ask, "Do these theories as to the inspirational value of the modern salvage attitude work out?" I reply without hesitation that in some cases the results are so discouraging along this line that they would seem to disprove conclusively the theories advanced. On the other hand, when men and women so develop in this work that they attract attention outside of the department and are transferred in spite of salvage department protest, it

means something more than an exceptional person accidentally located in this work. These cases have been too frequent for the good of the department.

Again, when a department acquires and maintains a reputation for united loyalty and team work, the method under discussion can doubtless be credited at least partially.

Then when the rate of turnover, unfortunately very high in these days of restlessness and turmoil, maintains an average materially lower than that of the factory as a whole, we must credit a few points at least to our program.

It is also an impressive fact that the full coöperation of other departments and companies has been developed,—and it has been developed from an initial attitude of skepticism.

But most conclusive of all is a talk with the individuals not only in this group, but also in the departments and companies coming in touch with the activities of the group. That is conclusive.

In saving waste, we have inspired the workers of hand and head.
EVERYTHING HAS A VALUE.

Efficiency and Thrift

The New Demand upon the Industrial World

By W. ROCKWOOD CONOVER

General Electric Company, Schenectady, New York

INDUSTRY THE BASIS OF NATIONAL PROSPERITY

INDUSTRY in its manifold forms is the recognized foundation of human existence. It is thus both historically and coincidentally the economic basis of the state and of our national government. A large proportion of the aggregate of human endeavor is measured by the visible evidences of material benefit derived from organized forms of productive labor. In time of peace industrial enterprise is an essential element in the development of the race, the upbuilding and growth of communities, the establishment of order, the stability and permanency of both state and national governments, and the conduct of private life. In time of conflict it becomes a vitally important factor in equipping and sustaining contending armies in the field, and the indispensable source of maintenance of the engines of war.

THE PART OF INDUSTRY IN RECONSTRUCTION

During the period of reconstruction and rehabilitation of the world upon which we are entering it will devolve upon industry to do a large share in bringing about the improved conditions which we are seeking to attain. Not only will industrial efficiency be measured by the value and character of the service rendered to the people at large in supplying an abundance of

products, but it will also be measured by the degree of economy and thrift with which the products essential to business and private life are produced—the amount in dollars and cents which is saved to the consumer in manufacturing and distributing costs. Our progress thus far in the work of reconstruction has, in no small degree, been retarded by the world-wide spirit of unrest. We have been appalled to learn the extent of certain forms of propaganda having for their purpose the upheaval of existing conditions both in government and business and the overthrow of the established order of both national and private life. Labor strikes, both in this country and in Europe, have accomplished the disorganization of the normal functions of human activity. We are, for these reasons, facing a future of industrial uncertainties which at present offer little hope of a speedy adjustment of the many perplexing problems before us or a permanent reestablishment of a rightly ordered basis of living.

IMPORTANCE OF INDUSTRIAL EFFICIENCY

In view of these facts it becomes imperative that all our industrial operations be placed upon a higher plane of efficiency and economy in order to render a larger measure of assistance during the present period of increasing unrest and distress. It is essential that manufacturers and

managers everywhere institute anew processes of investigation and analysis in order to determine where they stand in the competitive scale of productive power among the industries of the world. Extravagance and waste and inefficiency have heretofore been nearly universal. Nowhere have invested wealth and capital attained a full measure of success commensurate with the possibilities involved, or produced results representing one hundred per cent utility of equipment and facilities supplied. Large resources have been devoted to industrial enterprise only to demonstrate that net earnings are not comparable with initial expenditures, and nowhere do we obtain the full benefit of human effort or the largest product possible through the consumption of labor and material.

Many industries are handicapped by high manufacturing costs through failure to establish proper systems of economic control in all the functions of industrial operation. In many manufacturing plants there is evident a large degree of inefficiency and waste, coincident with which there usually exists a lack of coordination and cooperation in the functions of management and factory supervision. Losses and delays in production occur because of incorrect or incomplete designing, improper and inadequate distribution and supply of tools and materials to the shop, incomplete drawings and instructions to the workmen, and lack of care in authorizing and following out production schedules. To these add defective equipment, unsanitary shop conditions and lack of interest in the individual, and we have the chief explanation of the universal decreased effectiveness of human endeavor and

the inevitable curtailment of the volume of industrial product.

Statements of the ratio between capacity and accomplishment in industrial undertakings are sometimes exaggerated and pessimistic, but one does not need to look far to perceive that too large a factor of the world's labor is expended in the consumption of man-power and energy without a satisfactory commensurate return.

ORGANIZATION FOR MORE EFFICIENT SERVICE

We have a gigantic task, a stupendous work, to perform, if we are to meet all the problems of reconstruction at home and render our share of service in rehabilitating the war-torn and ravaged sections of the earth. We cannot hope to accomplish this task rightly and completely without a changed vision of the problems of production, of commerce and labor and of the distribution of the material necessities of life. It will not be sufficient simply to produce in quantity. It will be our greater duty to establish a higher order of efficiency and to practice a degree of thrift in all our industrial processes which will enable us to meet the pressing needs of the people at greatly reduced manufacturing costs.

New Lines of Organization

The organization of new industrial undertakings will doubtless have to be developed along new lines. Industries will need to be established for more definite and specific purposes. The plans for founding new business or building new factories must give greater consideration to a proper differentiation between that portion of the product or apparatus which it is desirable to manufacture at the home

assembly plant and those parts or details which can be purchased with greater economic advantage from outside concerns engaged in the production of small parts. Because of this fact it will be necessary to analyze more exhaustively the principal phases of proposed organization and all acts relating to the founding of a new industry in the beginning, in order to proceed with fully defined plans in reference to the nature and extent of the equipment required, lay-out and construction of departments and buildings, and the spaces to be allotted to receiving, shipping, storage, etc.

Concentration of productive processes and of tools and equipment on the one hand, and segregation of manufacture on the other, must be studied in the relations which they bear to transportation, to available sources of supply, to advantages in making purchasing contracts, to productive efficiency, and coincidentally and directly to economic and profitable factory costs.

New Principles of Management

The advanced principles of management and supervision must receive a new degree of attention, and more scientific thought and study must be given to the subject of coordination and cooperation of executive and productive forces. Greater concentration of authority and of all official acts, the elimination of repetition and duplication of directive effort, and the establishment of higher standards of operation, involving greater speed and precision and greater finality in all the rules of shop practice, will be essential to meet the demands of progress in the new industrial period that is before us. New standards must be set up as rapidly as new experiences have

developed new knowledge and have demonstrated more practical methods of performing either official or mechanical work.

Constructive Engineering and Designing

Our engineering and designing work will need to be more constructive, more final in its application to shop processes. The experimental stage of new designs will have to be wrought out and completed in a field or department by itself. The new order of things and the rapidity with which a new invention of public or private utility must be put into production will render imperative a greater degree of completeness and refinement in design than has heretofore been realized. When the shop starts work it must be with well defined plans and instructions, with no stoppage of productive processes through uncertainty or lack of information, and with the stamp of finality and accuracy upon every workman's drawing as he takes up each new task on bench or machine.

Improved Production Routine

In the organization of production routine there must be a broader and more intimate knowledge of shop conditions, in order that the movement of materials in rapid, progressive order and sequence of operations may be provided for, and the delivery of separate details to the assembly floor with regularity and certainty accomplished. This will involve a more extended analysis of both human labor and shop equipment, a rearrangement frequently of men and machine tools, in order to systematize movements and secure greater precision of actions both manual and mechanical. It will involve a greater

refinement of shop processes, the substitution of modern tools for old, of machine performance for manual tasks, and a general speeding up of all operations in effective unison of effort toward a common end.

The old methods of handling production must be eliminated from present industrial establishments and the progressive shop of the future. The distributing of tools and materials, instituting schedules of output, or providing the workman with drawings and instructions, must be with such accuracy and promptness of service as shall render the application of all directive effort to manufacturing processes efficient and complete.

Production routine cannot be divorced from indirect labor in any analysis looking toward improvement in industrial processes as a whole. The systematic supply and movement of materials through successive machine and assembly operations are directly dependent upon the expense forces of the shop. These forces need to be organized into units of proper size for harmonious action and cooperative effort. Careful supervision and patient instruction need to be given, the standard of service raised and a higher degree of efficiency established in the same manner that we demand precision and cohesion in mechanical work.

Purchasing Raw Materials

The purchasing department has a new and added burden and a more difficult task to perform brought about by the world war. Many new problems are involved in obtaining the factory's supply of raw materials which did not exist three years ago. With increased cost of metals and

fabrics other influences have combined to make the work of the purchasing agent hard and often impossible of result. Retarded output due to strikes, increasing consumption and demand in every part of the world, congestion and delays in transportation, all tend to render the obtaining of stocks more and more a matter of uncertainty and delay.

With these increasing difficulties greater effort must be made, not only to find new available sources of supply, but to conserve and save in the purchase and use of everything required by the shop. System of control must be set up in every department and rigid rules of economy established which shall make impossible the improper employment or wasting of anything of inherent value. This will involve the instituting of new methods of procedure in most factories, for as a nation and as individuals we have not yet taught ourselves the full lesson of economy either in the administration of government or of industrial enterprise. We are predisposed to extravagance and waste, to inordinate desire to have everything in abundance, to the consumption of many material things which cannot be demonstrated to be of essential value to either our physical well being or our mental advancement and growth. Not only productive stocks but expense supplies and materials for maintenance of equipment and for the prosecution of daily office and shop routine must receive greater attention than in the past, and new practices be established which will limit and conserve the use of these materials within the bounds of carefully regulated and scheduled manufacturing requirements.

Greater Efficiency in Power Production

The production of power, heat, and light is a field demanding special attention at the present time. It offers new opportunity for vast improvements in the type and character of installations, and a higher degree of economy in operation. The present fuel shortage lays new emphasis upon the need for more investigation and study, on the part of manufacturers and managers, into the cost of electrical energy and of steam for heating and manufacturing purposes. New stations will have to be built and extensions planned to provide for large increases in generating capacity. The old equipment of engines and boilers must be rapidly superseded by modern apparatus before power can take its proper place among other functions of industry already engaged in the conservation and building up of the world's resources. There must be immediate recognition of the need for more efficient installations from year to year, more scientific methods of operation and better systems of control of consumption in the shop, in order to keep pace with the present and future growth of industrial supply and demand.

Conserving Industrial Wastes

A new interest has been awakened in the subject of salvaging wastes which is obviously the direct result of the war. Conservation in industry has within the brief space of less than three years become a world-wide slogan. The world is fast becoming aroused to the fact, that saving is now one of the chief, vital principles of existence; that the extravagant, wasteful practices of the past mean ruin to the nation continuing them, and that it is necessary to remould our

thought and action to higher standards in both political and economic life.

In industry these words have assumed a new and more vital significance for us since our entrance into the world's struggle to establish a firmer, more stable foundation of peace. Saving and utilizing the by-products of production have gained a new prominence among other established practices of recognized value in engineering and manufacturing. There now exists a paramount necessity to save everything of inherent value which cannot be ignored or gainsaid. It is becoming pressingly evident that we must reorganize our present practices both in business and manufacturing in order to meet the new problems brought about by the world war. It is plainly the duty of industrial managers everywhere, of the leaders of big business of every kind and of the citizen in every calling of life, to study in this great crisis the conservation of waste and the salvaging of the by-products of production and every-day living as never before in the history of our country. Not a pound of metal or fabric; not a drop of essential oils or chemicals; not a piece of leather, rubber or wood; not even a scrap of paper, should be allowed to go to waste or escape the process of reclamation.

Salvaging industrial wastes has a more far-reaching significance than most people realize. The necessity for universal, energetic action is now multiplied a thousand fold. It is obvious that the unnecessary consumption of finished fabrics or failure to reclaim by-products necessitates increased production of raw materials, and increased production, of whatever nature, means additional labor, addi-

tional transportation facilities, the tying up of railway equipment and congestion of traffic; all of which seriously affect the movement of the long list of products required by the consumer.

The conservation of by-products is more emphatically brought to our attention by the exigencies of the great industrial struggle now going on, by the measure of uncertainty of continued and uninterrupted production of many of the important commodities of life, and by the increase in living expenses of the people beyond reasonable and just bounds. There appears at present no ray of light forecasting to a satisfactory degree the establishment of a properly stabilized condition of things in the industrial labor field.

The gigantic strides of business, the growth of new communities, the wealth of big cities and the world-wide demand for products have all tended to develop a confidence in our abounding resources and a habit of wastefulness both in production and consumption. This tendency has been conspicuous in governmental operations, in the building and operation of systems of transportation, in many public enterprises, and in the operation of manufacturing plants as well. Contiguous areas between shops, as well as factory floors and storerooms, show accumulations of metals and other materials, left over from productive processes or from the work of maintenance and repairs. Lack of time and reduced labor forces make it convenient to leave the disposal of these materials to some future date.

Successive inventories frequently show lists of parts held for possible supply orders which could judiciously

be turned into the scrap market at advantageous prices and thus aid in maintaining the country's supply of essential metals. Comparatively few industries are free from these accumulations and few realize the extent of the loss entailed through neglect to save and sell their by-products systematically, as an important part of business. It is essential, now more than at any previous period in the history of manufacturing, that industrial managers give a fuller consideration to this most vital of factory subjects.

It is the practice of many managers to devote their attention chiefly to getting out large shipments of product, piling up profit and loss surplus, leading in novel engineering designs and in an efficient performance of manual and mechanical processes in the shop, while the conservation of wastes and utilization of factory by-products receive only a limited degree of attention. The failure to utilize by-products in these industries does not represent the true degree of efficiency with which manufacturing processes as a whole are conducted, nor may it always be a definite measurement of managerial and executive ability.

It may not always follow that the organization which does not pay systematic attention to this important phase of business is not progressive in other functions of manufacturing. It can, however, be stated as a generally accepted truth, that the industry which gives special care and consideration to the problems of thrift in general excels in all other phases of industrial operation, whether relating to executive capacities or to mechanical processes. Wastefulness is both a direct cause and result of errors in operation, a cause of decrease

in productive volume, of increased factory costs and a burden to the public in higher prices in finished fabrics and materials.

Waste Reclamation During the War

During the war much was done to incite the people to greater interest and activity in saving wastes. The whole nation was urged to establish practices of thrift and economy and to conserve materials in order to render assistance to the government in its time of need. The Reclamation Service of the Department of Commerce did a most valuable work in teaching the country to save. All kinds of metals, steel, iron, copper, brass, aluminum and alloys, and a variety of wastes such as rubber, rope, paper, cotton fabrics, bags, barrels, boxes, oils, chemicals, and residues of many sorts and kinds were reclaimed by manufacturers and by the people at large and sold or converted into by-products and bases of use in the prosecution of the war and of industrial enterprise.

During the period of conflict the amount of waste materials gathered increased approximately twenty-five per cent. In the year 1918 several items, including scrap metals, paper, rags, wool waste, bags and cotton linters aggregated more than one and one-half million dollars. The government itself took unusual interest in the work of conservation and reorganized its methods of disposing of waste. Many materials which the Army and Navy had disposed of by dumping and burning were carefully saved, sorted and classified and utilized or disposed of to good advantage.

The railroads also have caught the spirit of better economy and have developed new practices in the field

of conservation which have netted many millions in money return for scrap sold and in valuable materials saved for further use.

The larger industries of the country are rapidly beginning to view this subject in a new light and to assume their share of responsibility in this great work of putting human activity and human living on a more efficient, progressive and sounder economic basis. One of our big electrical plants is reclaiming more than eighty million pounds of scrap products annually. Others are studying the subject with a new interest and establishing systems which make for better economy and thrift. Such is the work of organization and such are the results which may be secured.

The Need of Permanent Reclamation Service

It is to be keenly regretted that the Senate Appropriations Committee failed to make any appropriation for the continuance of the Reclamation Service. Because of this fact the office has been closed. In view of the universal, pressing need for greater conservation and the almost incalculable value of the work to the nation, it is difficult to conceive any true justification of the committee's action. It requires but slight analysis to convince us that the department should be maintained as a permanent government service to the people. Through this office practical appeal could be made to the governors of states, through the governors of states to mayors of cities and presidents of villages, and through these latter men to the heads of boards of trade and to public spirited citizens, to cooperate in the great work of saving the nation's wastes. Through this channel also

could be disseminated much useful knowledge and instruction relating to the work of reclamation, which would thus reach in a helpful way not only the populous industrial centers but the outlying districts as well, and by this means bring about a widespread, concerted action for the public good. No one may attempt to predict the full extent of the value or the aggregate return of such a movement to the government and country at large.

A NEW CONCEPTION OF ECONOMY

No appeal to the manufacturer to save and utilize by-products can be made too forcible or too strong. What we need throughout the whole extent of America today is to learn individually and collectively as a nation the vital principles of economy and conservation. We need as a people to learn to save everything, of whatever intrinsic value, not simply during the present moment of great world-wide demand, not simply during the coming period of reconstruction work, but for all time to come. There is insistent need to establish those principles of thrift and economy in all our industrial undertakings, which shall make extravagance and wasteful practices things to be decried, and shall set a price of honor and credit upon the saving of the so-called unimportant things—the smaller by-products of manufacturing.

It should be the purpose of the management of industries, both large and small, in all parts of the country, to conserve everything possessed of inherent value. Proper consideration must be given to the cost of accumulation and preparation for market, but the work of reclamation should be carried on to as large an extent as

possible consistent with conditions and without actual loss. Improved methods of sorting and handling will usually permit a wider range of classifications which result in obtaining higher prices for the various classes and grades. The question of profit, however, in the process of reclamation should not always be the chief or deciding factor. It should be our aim to render all the assistance possible both to the national government and to the mills which manufacture raw materials or finished fabrics, in conserving everything that may be of use in production, and in consistently following out this principle we will be of practical service to the public at large.

CONSERVATION OF HUMAN LABOR

The factor of human labor has assumed a new and most important place in all industrial operations. During the recent world conflict its importance was multiplied a thousand fold. Today every productive process is manifestly dependent either directly or indirectly upon the constant application of human energy, mental or physical. It is evident, therefore, as we take up the work of reconstruction, that our efforts cannot be successfully carried forward without the coöperation of the individual and of skilled labor as a class. All our plans looking toward the establishment of a higher order of efficiency in manufacturing and a greater degree of economy must include the workmen whom we employ. It is now a part of our duty to teach them habits of thrift, the way to become provident, the way to accumulate and save. We must afford them assistance and encouragement in establishing homes, in investing in

real estate and bonds, in buying shares in the factories where they labor, in protecting their families with safe insurance, in educating their children, and in any and all ways help them in the growth and development of higher standards of life.

Now, as never before in the world's history, nations and governments are looking to industry to do the greater share in the united effort to establish an era of permanent prosperity and peace. And what does it all mean? It means that man-power at home is as big as man-power in the trench. It means that economy of effort and precision in action are as important in the factory as science and discipline on the fields of battle. Conserving human energy and devoting it to the business of the world's production must be accomplished by training and study just as definitely as we train for the scientific practices of war. New methods in the employment of help, adapting men to tasks for which they

are fitted, training them for higher service, instructing them in economy of physical strength, educating them in the maintenance of health and comfort and safety, are all problems of management which emphasize the greater responsibility of the nation's immediate future.

It is essential that the highest accomplishments possible of attainment shall be realized in all industrial enterprise. The call is to industry. If we are to attain political freedom and economic stability throughout the countries of the world, it must be through a higher refinement of man-power—a fuller degree of perfection in all the varied forms of manual and mechanical art. Systems of control must be set up in every factory in the land; analyses of all manufacturing operations, of official and directive functions, of every detailed process of production, must be instituted, which shall make possible the highest degree of perfection in all human endeavor.

Requisites of a Good Investment

By ALBERT W. ATWOOD

Princeton, New Jersey

SUITABLE INVESTMENTS FOR THE MASSES

IT is the purpose of this brief article to consider a few essential factors of the problem of providing suitable investments for the masses of the people. I am not concerned with the investment problem of the businessman, so-called, or of the more prosperous professional. The important question which the country must face is that of inducing the great bulk of its wage earners to save. Provided they do save what then is to become of their funds?

OPPORTUNITIES OFFERED

Speculative Stocks

It must be agreed and admitted at the outset that the small investor should not risk or speculate with his funds. This is hard doctrine because the little fellow likes to take a chance as well as the big one. Indeed the promoters of dubious stocks make out a specious but alluring argument for financial democracy, one might say, when they offer oil or mining stocks that promise fabulous returns.

"Why labor for years?" they ask. Why put your money into cold vault like repositories? What the average man wants is not a repository for his money, but a good thing. Bankers, financial writers and advisers—all these tell you to put your money in the savings bank. Why not take a try at fortune? The millionaire made his money by taking big chances, and by making lucky

strikes. I will give you a chance at the same game."

Not until the offering of speculative stock to people of small means is widely recognized as charlatanism of the worst kind will much progress be made in spreading sound investments among the masses. I refer of course to promiscuous, miscellaneous stock offerings, and not to the purchase of shares in recognized, established transportation and industrial companies directly by the worker in those companies. It would be a hard doctrine indeed that the masses, most of whom are destined to remain wage earners all their lives, should never invest except in low interest bearing securities.

Profit Sharing

The opportunity for profit making on the part of the wage earner, aside from what is technically known as profit sharing, may come, and in increasing numbers of cases probably will come, through the purchase of stock in the company for which he works.

Government Securities

Cannot this whole problem of suitability and adaptability of investments for the people be treated in a brief, simple manner? Is it not solely a matter of degree? By that I mean that disadvantages such as risk, inconvenience, lack of marketability and the like in return for which the owner expects larger profits, should be assumed in increasing measure

only as the investor progresses in wealth.

Elimination of Risk.—The poorer the investor the fewer “outs” should there be to his investments. The wealthier the investor the more chances can he afford to assume in return for the possibility of large gains. This is a simple principle, an A B C of the subject, but I think that even among experts its practical applications are often overlooked.

Let us start with the young married man, the workman or clerk of twenty-seven years, with a wife and one or two children. What should he invest in? Obviously in government savings stamps or in a good, strong savings bank. Frankly I do not think there is much choice between them. These two forms certainly come nearer to investment perfection for the young man of our imaginings than any other.

In either case he has a high degree of security, although of course the savings stamp of the government is safer theoretically than the savings bank. But for practical purposes it is well known that certain classes of savings banks are sufficiently free from risk. In other words the young clerk will not lose his hard won savings in either place. That is the first consideration. There is of course the Postal Savings Bank, but I take it that with the higher rate of interest paid upon government savings stamps and upon savings bank deposits there is no advantage in urging the merits of Postal Savings.

Convenience.—In the next place the stamps and the savings banks, or rather the certificates which are built up upon a collection of stamps, offer great convenience in the matter of deposit and withdrawal. There is not only convenience but freedom in

these matters; also sufficient privacy. This applies both to the elements of time and of amount. Finally there is freedom from taxation.

Limits of Government Securities and Savings Accounts.—How any sane and honest person can urge the wage earner to invest elsewhere until he has at least enough in the savings bank or in government securities of a non-fluctuating character to meet sudden emergencies I cannot conceive. Further let me say that I do not regard these two forms of investment as wholly synonymous and interchangeable. The wage earner should (if he lives where there is a savings bank) have both. The government stamps or certificates are the safest investment on earth, but it would be a mistake for the wage earner to put several hundred dollars into them and none into the bank. For the savings bank account gives him a standing in the community, and affords him advantages when it comes to making loans and obtaining information regarding business or financial subjects which the government securities do not afford. A savings bank account, to be quite frank about it, has ulterior advantages which the government securities lack.

Life Insurance

Next in order for the worker who has dependents is life insurance. This, I think, is too obvious to require elaboration. Often it is well to keep on buying life insurance up to large sums, many thousands of dollars in fact, before any other investment whatever is even considered. Why waste time talking about the relative advantages of public utility bonds as against preferred industrial stocks for, let us say, a bookkeeper when we

know perfectly well that if he should die his family would be in dire want. It is utter piffle, and I think that a large part of the efforts of stock brokers and bond houses, or investment bankers, to win the small investor are entirely injurious and pernicious. These people that are sought out are still in many cases about twenty thousand dollars below the point where they should become direct investors at all. They are still in the life insurance stage.

Somewhere along here the clerk with the wife and child should be taught to open a regular checking bank account, for the convenience which it affords and also for the standing which it gives him in the community.

Having acquired a good little nest egg in the form of a savings bank deposit or government savings stamps, or both; having taken out ample life insurance and opened a bank account big enough to take care of current bills, then the young man had better consider the purchase of Liberty bonds and a home. I refer of course to piping times of peace and not to war times when to purchase a Liberty bond is an essential of patriotism.

Certainly the clerk should not buy even a Liberty bond any earlier in his financial progress than this, because the bond is subject to market fluctuation and no one is warranted in urging upon him the risks of the market until he has various back logs of the kind already described. As for a home, the wisdom of its purchase depends of course to some extent upon the young man's location, upon whether his job is reasonably permanent and other similar considerations. But generally speaking it is a good investment and pays dividends of

family happiness and good citizenship which cannot be expected of a bond or stock in a corporation of which the owner hardly knows the name.

Building and Loan Associations

Next let our clerical friend look into the building and loan in his town or the credit union, if there is one, in his own office. Or perhaps his firm is offering stock to its employees. This is the one case where he can judge direct investments. Of course many employees do not like to buy stock in the concern for which they work because they fear it will tie them to their present employer or because it may give the employer an excuse to reduce their wages. But if these dangers are guarded against, if the independence of the worker is in no way infringed upon by a stock selling arrangement, or if the worker prefers to stay in one place and cast in his lot more or less permanently with one concern, then the more widely the custom of inducing employees to invest in the business the better.

With many thousands of workers, especially of the clerical and more highly skilled classes, I see no reason why investment should take any other form after the more primary requirements already referred to have been taken care of. Of course I recognize the danger of possible abuse. Fly-by-night concerns might enlist their employees' money and decamp with it. But even the more ignorant worker can form a fair judgment as to whether the concern which employs him is of that variety.

Certainly he can form a hundred times better judgment than of a concern for which he does not work. And the corporations which have

offered stock to employees thus far have in most cases been highly successful. A concern must be fairly stable before it can really make any headway in such financing.

If our clerk still goes on earning enough for further investment—if he feels he has put all that is safe in his own concern or if his employer does not offer him stock—then let him study outside offerings, first of bonds

and then of stocks. But I feel that there is no such hurry to educate the small investor in direct participation in corporate bonds and stocks as many experts insist. After the young man has provided for himself in the manner here briefly outlined then there will be time enough to consider the bewildering variety of direct investments, with their qualities, their suitabilities and adaptabilities.

Speculation and the Small Investor

By THEO. H. PRICE

Editor of Commerce and Finance

CHANCE A FACTOR IN LIFE

FROM the cradle to the grave life is a speculation. It has been said that "We are all under sentence of death with an indefinite reprieve," but most of us, nevertheless, calculate upon at least an average life and make our plans accordingly. Facing, as we do from hour to hour, the chances of illness, accident or financial disaster, it is not surprising that we should become more or less callous to the hazards of existence and be willing to increase them by putting our money, when we have it, into schemes or investments that promise or are described as promising large returns.

It is the essential uncertainty of life coupled with the hope that each individual entertains that he may be more lucky than his fellows that is at the bottom of the speculative instinct that most men and women evince. This instinct is a sound one, for without it progress would be impossible.

We have the spirit of adventure to thank for nearly all the great discoveries that have advanced mankind. It has been very truthfully said that "if our alphabet were ideographic instead of phonetic, the words conservative and unprogressive would look very much alike" and the speculative instinct is not to be discouraged, for through its exercise Columbus discovered America and the political and scientific pioneers of all generations have opened up opportunities by which humanity has profited.

PITFALLS OF SPECULATION

In thus acclaiming speculation it is, however, important to carefully differentiate it from gambling. Speculation has been defined as hazard plus intelligence, gambling as hazard without intelligence, and if we bear these contrasting definitions in mind it will not be difficult for us to avoid the pitfalls that the unscrupulous provide for those who are willing to risk their money thoughtlessly.

In an effort to protect the careless or gullible members of society against themselves many of the states have enacted what are called Blue Sky Laws designed to make fraudulent promotion, over-capitalization and stock swindles impossible, but there are no laws that can give a fool immunity from the consequence of his folly, and it is questionable whether the Blue Sky Laws haven't done more harm than good in that they lead many to believe that the securities that are issued in accordance with their provisions may be bought as safe investments without further investigation.

It is, in fact, extremely doubtful whether the judgment of men can be educated or clarified by legislation which seeks to make the exercise of a discriminating and studious intelligence unnecessary, and since chance is a factor in the problem of life that cannot be eliminated, a study of the law of chance is necessary in order to deal with it intelligently.

THE LAW OF CHANCE

The great astronomer, Richard Anthony Proctor, was the first authority of note to develop the law of chance. By a series of experiments extending over a number of years he discovered and proved that where the chances were theoretically equal, it was necessary that they should be taken an almost infinite number of times in order that the results might equally counterbalance each other. Thus, he asserts, it is not certain that a well balanced coin thrown into the air even a million times will come down *heads up* 500,000 times and *tails up* 500,000 times at the end of the experiment, and the first postulate of the law of chance that should be taken into consideration is the factor of luck. We must make allowance for it in all our calculations and endeavor, in so far as it is humanly possible, to put ourselves beyond its operation. For this reason, no one should embark in any speculation, however promising, unless his knowledge of the business involved and the conditions surrounding it are sufficiently intimate and personal to enable him to feel sure that the probabilities at least favor the expectation of a profitable result.

CHANCE INVESTMENTS

Since no one can be thoroughly informed with regard to more than one or two of life's more important financial, industrial, commercial or agricultural activities, it is a corollary of the foregoing statement that it is exceedingly unwise and hazardous for anyone to put his money into a business with which he is unfamiliar unless he makes the investment upon the advice of a trustworthy person in whose knowledge of the proposed investment he has profound confidence.

It is, for instance, foolish for a farmer to invest his hard earned savings in land that he has never seen and concerning whose agricultural possibilities or market value he has no first hand knowledge. It is equally foolish for any one else, no matter how he may have made his money, to invest it in any security of whose value he cannot convince himself by personal examination or in regard to which he is unable to obtain trustworthy information from a person in whose knowledge and good faith he has complete confidence.

As a generalization, therefore, it may be said that it will be wise to make it a rule not to invest any money in things concerning which we are unable to inform ourselves by personal examination, unless we base our action upon the advice of those who are specialists in the business concerned and of whose integrity we are entirely confident. In the field of corporate investments, meaning thereby the stocks and bonds of corporations, there are throughout the United States a number of high class and responsible concerns, firms or companies whose business it is to select sound enterprises in which the money of their clients may be invested. To the consideration of the problems involved they bring years of experience and training. They are thoroughly alive to the fact that if they make mistakes they will lose the prestige and confidence that they enjoy in the financial world, and while they err occasionally their judgment is, as a rule, sound. It is, therefore, safe to say that no one having money to invest should buy the securities of any corporation unless they are recommended or endorsed by some responsible investment concern.

The fly-by-night-salesman who comes into your town with a fairy

story in regard to the distant oil well or mine into which he asks you to put your money should be summarily dismissed with the suggestion that he submit his proposals to the nearest successful banker and that you will consider them only after that banker has approved of them. The land agent who seeks to sell you property in the Everglades of Florida or the Great American Desert upon the theory that it can be reclaimed and made to blossom like the rose by the expenditure of a little money should be similarly treated. The promoter of a company that controls a patent for a machine that will do the work of one thousand men should be required to furnish indubitable proof of the machine's efficiency and its successful commercialization before you allow him to persuade you to put your hard earned savings into the corporation that has been organized for its development.

If you are, however, disposed to take long chances and are convinced of the good faith and honesty of those who are inviting you to make the hazard you should then feel sure that the odds in your favor are sufficiently high enough. For those who have money and are willing to risk a small portion of it in something that promises very large profits but involves, nevertheless, great hazard, an intelligent investment made upon a basis that promises, say, a profit of \$100 for every dollar invested is not perhaps unwise, but in making hazardous investments of this sort care should be taken to apply the principle of average

as in the case of insurance, and a sufficient number of such investments should be made in different enterprises to allow for an unfavorable result in the case of most of them.

There are some investors who apply this law of average scientifically. They put a small sum into each new enterprise that is brought to their attention under respectable auspices upon the theory that although only one out of each ten may turn out profitably their gain will be sufficient to more than offset the losses that they will sustain in the case of the other nine. It is, however, hardly practicable for the average investor who has but an occasional opportunity to put his money into these extra hazardous though promising enterprises to adopt such a policy, and even if he did, it is questionable whether he would have the courage to pursue it in the case of the tenth investment if his nine previous ventures had been unsuccessful. The only wise course for him to pursue is, therefore, to refuse to embark upon any speculation concerning whose hazards he is not thoroughly informed, either by personal observation and experience or the testimony of those in whom he has confidence.

If he follows this rule he may possibly miss an occasional but very remote opportunity for making a large profit but he will, on the other hand, be reasonably sure to avoid the loss of his capital and will be certain to enjoy the complacency of mind which comes to those who insist upon "safety first" in the use of their money.

United States Government Bonds as Investments

By JOSEPH E. CUMMINGS

School of Business, University of Minnesota, recently of the United States Treasury Department

GOVERNMENT BONDHOLDERS

UNTIL the spring of 1917 the average American citizen of this generation was very little interested in the investment features of his country's bonds. There have been, however, three or four previous periods of our national history during which government securities attained considerable significance in the lives and calculations of a comparatively large proportion of our citizens. In the intervals of these periods of national emergency United States bonds have been almost exclusively an investment for financial institutions and persons of wealth.

Aside from the general fact that the great mass of Americans did not acquire the habit of investing in securities of any sort, there are two chief reasons why government bonds ordinarily have been attractive to only a certain small group of institutions and wealthy investors. (1) The denominations of the bonds have been too large to be conveniently handled by small investors and the "circulation" privilege attached to many issues has operated to keep the interest rate, or at least the yield, so low as to make their purchase profitable only to national banks or those persons seeking the advantage of a tax-exempt investment. (2) The tax exemption feature, as a practical matter, has been much more valuable in the past to the wealthy person than to the individual of moderate means. These conditions, and some others of lesser force, have operated to keep the aver-

age citizen from concerning himself in ordinary times, with the investment possibilities of government securities.

BONDHOLDERS DURING WAR PERIODS

The financial exigencies of war have, during several periods in the past, made it imperative to raise such large sums that a comparatively wide distribution of the government's obligations became absolutely essential. In attempting to borrow money for war purposes any government is ordinarily confronted by numerous financial obstacles peculiar to war time, as well as by the increased difficulty accompanying the demands at any time for unusually great sums. These conditions make it necessary for the war-time administration to materially increase the attractiveness of its securities, not only to special groups but to the entire citizenry of the nation as well as to foreign investors, when the international situation so permits. This increased attractiveness of the securities offered, plus the promptings of patriotism and whatever coercive measures are possible, has resulted during every war period in making government bondholders of large groups of American citizens who, under ordinary circumstances, would never have seen or handled the stamped paper of their country.

The proportion of citizens who were incorporated in the bond purchasing class during our past wars has varied according to the government's comparative need for money and its ability at the time to touch the mass of its people

with inviting terms and coercive measures.

The financing of the Mexican War in 1846 and the Spanish-American struggle in 1898 called for comparatively small sums at times when the national financial conditions were so good that few persons were added to the then existing class of government security holders. On the other hand, the War of 1812 and the Civil War were prosecuted under conditions which strained the financial resources of the nation and forced a comparatively wide distribution of government bonds.

An analysis of conditions under which these war bonds were purchased and of their post-war prices on the stock exchanges will determine whether or not United States bonds issued to finance the War of 1812, the Mexican War, the Civil War, and the Spanish-American War were a good investment for the original subscribers who retained these securities or, in fact, for anyone who purchased during or immediately following the war period. Because of the present wide distribution of our Liberty Bonds and Victory Notes such an analysis should be of interest and value to the large group of persons who are concerned with the question of the probable future value of their present holdings of war bonds as well as those who are turning over in their minds the desirability of investing in Liberty Bonds¹ at present market prices.

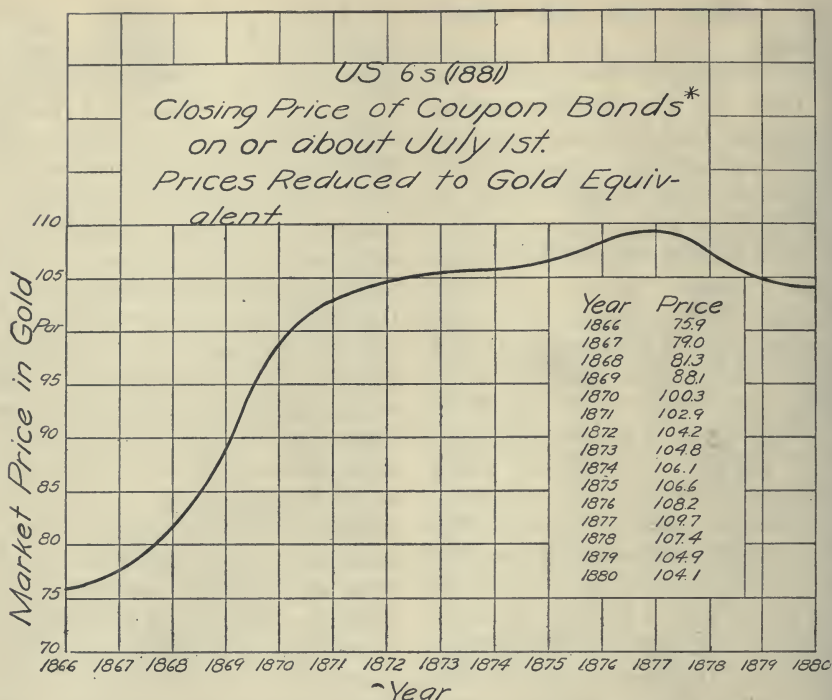
CIVIL WAR BONDS

During the period of the war the national debt increased from about 90 millions in 1861 to over 2,700 millions in 1865. As the war went on there was a steady shifting of the national credit

to a higher interest rate basis. In 1861 36 per cent of the debt was paying 5 per cent interest and 64 per cent was at 6 per cent. By 1865 only 11 per cent of our debt was on a 5 per cent basis. Fifty-four per cent was at 6 per cent and 36 per cent of the total debt was paying 7.3 per cent interest. These were the nominal interest rates, but it has been estimated that, because of the depreciated state of the currency and the fact that interest was paid in coin, the average interest being paid on the public debt amounted to about 8 per cent. Our national debt at the termination of the war was represented by approximately twenty miscellaneous varieties of securities, ranging from 5 per cent long-time bonds to 6 per cent three-year compound interest notes. The story of the conditions of issue and the subsequent market price of a few of the larger and more typical of these issues indicates that investors in Civil War bonds not only received a very profitable rate of interest, but also, in practically every instance, a substantial increase in their capital investment.

Loan of July and August, 1861.—The U. S. 6's of 1881, as they were called, were marketed at par. The bonds ran for twenty years and matured in 1881. This issue sold slowly and was placed with difficulty. On October 1, 1861, approximately 189 millions of the U. S. 6's of 1881 were outstanding. By 1866 they were quoted on the market at 106 $\frac{7}{8}$ currency and continued to rise steadily thereafter until approaching maturity brought about a gradual decline to par. The increase in value of these bonds was even more rapid than is indicated by market quotations in currency. All during this period the currency in which the bonds were quoted was approaching parity with

¹The term Liberty Bond is used throughout this paper in its popular sense, i.e., to include both Liberty Bonds and Victory Notes.



*Based on New York Exchange quotations from contemporary issues of the *Commercial and Financial Chronicle*.

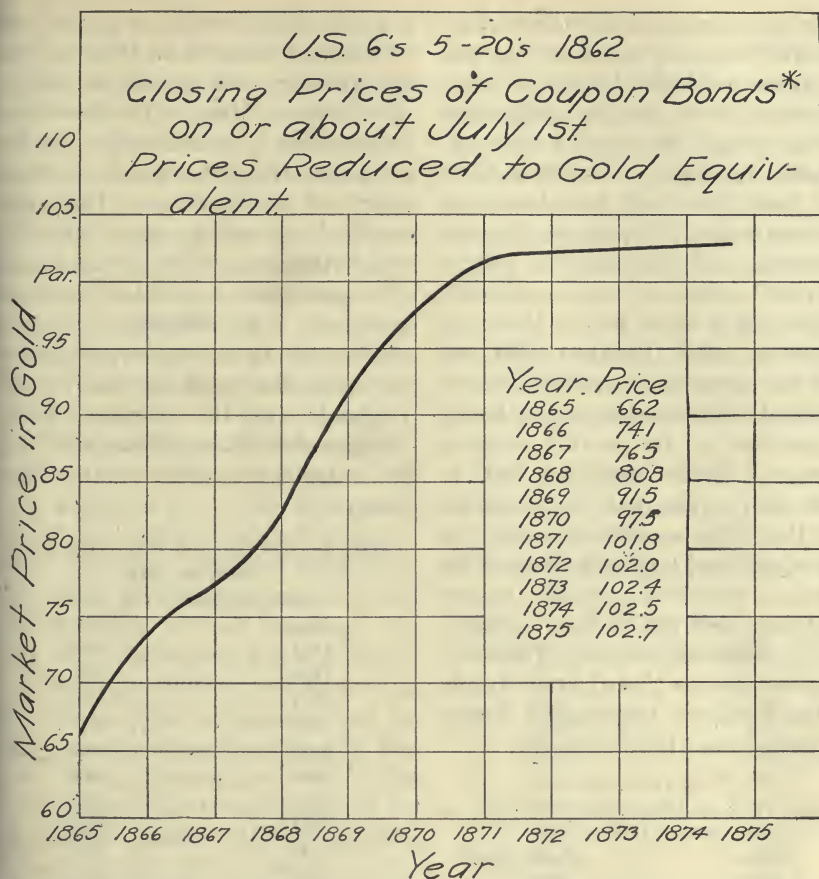
gold. The chart given above shows the gold equivalent of the New York Stock Exchange quotations on this issue from 1866 to maturity.

It will be noted that by 1870, only five years after the termination of the conflict, the U. S. 6's of 1881 were quoted above par in gold and that they continued to rise in market value until 1877 when they were selling for the equivalent of approximately 110 gold.

Loan of February, 1862.—The securities issued under this act were the first of the famous "Five-Twenties." This title came from the fact that the bonds were redeemable in five years and due in twenty years. Interest was payable in coin at 6 per cent. The average selling price was 100.35 currency—the equivalent at the time of about 88 gold. On October 1, 1865, nearly 515

millions of the issue were outstanding.

The chart following shows that within three years after the end of the conflict, "Five-Twenties" were selling on the market at considerably more than their issue price in gold. By 1871 the gold equivalent of their market price was nearly two points above par,—an increase in capital value to the original subscribers of approximately 16 per cent. In addition to this substantial increase in the value of their invested capital, the holders of these bonds had been regularly receiving their interest in coin during a period when currency fluctuations caused the actual rate of interest to amount to much more than the nominal 6 per cent. During certain periods the actual value of the interest received was at least double the nominal rate.



*Based on New York Exchange quotations from contemporary issues of the *Commercial and Financial Chronicle*.

Loan of March 3, 1864.—Because these bonds were payable in ten years and due in forty they were popularly known as “Ten-Forties.” They drew interest at 5 per cent payable in coin. On October 31, 1865, approximately 173 millions of this issue were outstanding. These bonds were marketed at from 100 to 107 currency. The currency dollar during this period averaged in value 49.2 gold. Thus the investors who paid 107 currency for this issue gave less than 53 gold for a security that by the end of the war had risen approximately ten points (to 62.2) in value.

By 1872 “Ten-Forties” were quoted on the exchange at the equivalent of 100 gold. The high point was reached in 1878 when the issue was selling on the New York Exchange for 108 gold—over twice the price paid by the original subscribers. In addition to having their capital doubled the original purchasers of “Ten-Forties” were receiving interest in coin amounting to over 9 per cent on their investment.

These facts make it clear that those who subscribed for obligations issued by the United States government to finance the Civil War secured an investment that gave very high returns.

While the nominal rate of interest on all Civil War issues was high, the real return was still higher because of interest payment in coin on obligations purchased with depreciated currency. In addition, holders of nearly all Civil War issues benefited by substantial increases in capital investment through purchasing the government's obligations with more or less depreciated currency and later having them redeemed in gold. Between 1869 and 1873 the government used its surplus revenue to retire its unmatured bonds by purchase at the market price in currency. These securities had so improved in the public estimation that the difference between what the government had originally received for them and what it was required to pay to get them back was, in every instance, a very substantial amount. The average price paid for United States bonds by the Treasury Department during this period was 112.27 currency.

U. S. 5's 10-40's

MARKET PRICE IN GOLD EQUIVALENT ON OR ABOUT JULY 1

Year	Market Price*
1865.....	62.2
1866.....	69.
1867.....	72.9
1868.....	76.6
1869.....	81.2
1870.....	94.8
1871.....	99.3
1872.....	100.
1873.....	100.5
1874.....	102.5
1875.....	103.5
1876.....	106.7
1877.....	107.7
1878.....	108.1

* Based on New York Exchange quotations from contemporary issues of the *Commercial and Financial Chronicle*.

WAR LOANS OF 1812

In 1830 the House Ways and Means Committee estimated that for over 80

million dollars worth of government obligations issued from 1812 to 1816, the Treasury received but 34 millions specie value. Many of the issues were marketed at large discounts—the first departure from the usual American policy of issues at par. The specie value of the returns from loans was still further reduced by the acceptance of depreciated state bank notes in payment. The difficulty in raising money was to a large extent due to the unpopularity of the war in New England and the Eastern States. These centers of capital furnished only an insignificant share of the funds raised.

MARKET QUOTATIONS 6 PER CENT LOAN WAR OF 1812 (ON OR ABOUT JULY 1)

Year	Market Price*
1815.....	92½
1816.....	89
1817.....	103
1818.....	103
1819.....	101½
1820.....	106½
1821.....	109½
1822.....	104½
1823.....	102½
1824.....	105½
1825.....	101½
1826.....	102½

* Prices on the New York Exchange from contemporary issues of the *New York Shipping and Commercial List*. Only consolidated quotations on War Loan 6's are available up to 1821. Prices for the loans of 1813 and of 1814 were quoted separately, beginning with 1821. Since these prices vary less than a point, the average has been used for the sake of simplifying the table.

16 Million Loan of 1813.—When this loan was marketed public credit was falling rapidly and it became necessary to accept bids below par. In order to raise the full amount the subscription books were opened a second time and new conditions, imposed by subscribers, accepted. This issue matured in

thirteen years, bore interest at 6 per cent, and sold at about 88 currency.

6 per cent Loan of 1814.—In borrowing the first installment of this 25 million dollar loan the government was forced to agree that if more favorable terms were extended to later subscribers the more favorable conditions should be retroactive as regards purchasers of the first installments. Under these circumstances the bonds were marketed at from 12 to 20 per cent discount and some payments accepted in state bank notes worth 65 specie.

It will be noted that these securities, which were issued at from 80 to 88, were selling at par within four years and at a considerable premium thereafter. The high point was reached in 1821 when the average price for the year on the New York Exchange was over 109. This was a nominal rise of some 28 points, but the real increase in the value of the investment was, in many cases, approximately 100 per cent. This, of course, was due to the fact that payment was accepted in depreciated currency and the securities redeemed when the monetary situation had improved. Much of the debt, in fact, was redeemed at more than par. Surplus revenue accumulated after the war and as no provision had been made for redemption before maturity the Treasury Department found it necessary to pay full market price in order to retire these obligations which were drawing a much higher rate of interest than was justified by the post-war condition of the national credit.

MEXICAN WAR BONDS

The prosecution of this war created a net debt of 49 million dollars. Due to the strong financial condition of the country, the excellent credit of the

nation, and the comparatively small amount of money required, all of the loans were placed at par or above. The aggregate premium on all the loans amounted to approximately a half million dollars. Nearly all offerings were oversubscribed. Eighteen millions were asked for in one case and nearly 58 millions were subscribed. The following table shows that the post-war market value of these bonds was always high, up to the outbreak of the Civil War when they met the temporary fate of all securities during that period.

U. S. 6's of 1867.—These bonds were due in twenty years and paid 6 per cent interest. They were marketed in 1847 at prices ranging from 101 to 102.

U. S. 6's OF 1867

MARKET QUOTATIONS ON OR ABOUT JULY 1 *

Year	Price
1849.....	116 $\frac{1}{4}$
1850.....	115
1851.....	116 $\frac{1}{2}$
1852.....	118
1853.....	121 $\frac{1}{4}$
1854.....	120
1855.....	119 $\frac{3}{4}$
1856.....	117
1857.....	109
1858.....	114 $\frac{3}{4}$
1859.....	108

* New York Exchange quotations from contemporary issues of the *New York Shipping and Commercial List*.

It will be noted that by 1853 the U. S. 6's of 1867 had reached a high point of 121 $\frac{1}{4}$.

Other Mexican War Bonds.—In 1848 16 millions of another 6 per cent loan were sold at 103 to 104. These bonds were known as the U. S. 6's of 1868.

Their post-war market value ran very closely with that of the U. S. 6's of 1867 as given in the above table.

In 1846 about 5 millions of ten-year 6 per cent bonds were marketed at par.

These securities were quoted at between 106 and 107 until they approached maturity. Comparison with the twenty-year 6's described above shows that the longer term of the twenty-year bonds gave them a consistent advantage on the market of approximately ten points over this ten-year loan of otherwise similar securities.

In spite of the fact that all Mexican War Loans sold above par they almost immediately went still higher on the market—indicating a strong demand for these securities at prices that gave a yield much smaller than the nominal rate of 6 per cent.

SPANISH-AMERICAN WAR BONDS

U. S. 3's 10-20's (1918)

(COUPON)

LOW MARKET PRICE FOR THE YEAR*

Year	Price
1898.....	104
1899.....	106 $\frac{3}{4}$
1900.....	108 $\frac{3}{4}$
1901.....	108 $\frac{1}{2}$
1902.....	105 $\frac{3}{4}$
1903.....	106 $\frac{1}{2}$
1904.....	104 $\frac{1}{2}$
1905.....	102 $\frac{3}{4}$
1906.....	102 $\frac{5}{8}$
1907.....	100 $\frac{1}{4}$
1908.....	100 $\frac{3}{4}$
1909.....	100 $\frac{3}{4}$
1910.....	101 $\frac{1}{4}$
1911.....	101 $\frac{3}{4}$
1912.....	101 $\frac{1}{2}$
1913.....	101 $\frac{1}{2}$
1914.....	100
1915.....	100 $\frac{1}{2}$
1916.....	100
1917.....	98 $\frac{3}{4}$

* New York Exchange quotations from contemporary issues of the *Commercial and Financial Chronicle*.

To finance the war with Spain the government in 1898 asked for subscriptions at par for an issue of 200 millions of 3 per cent bonds—interest and principal payable in coin. These

bonds were redeemable in ten years and due in twenty years. The issue was seven times oversubscribed. The annual market price of this issue is shown by the preceding table:

A considerable enhancement of the market value of this issue was due to the fact that they were available to secure national bank note circulation. In 1900 over 132 millions of this issue were refunded into the 2's of 1830 (consols), also available to secure circulation and with a longer time to run.

SUMMARY AND CONCLUSIONS

War Bonds Profitable Investments.—

The above analysis makes it clear that, without exception, the war bonds of the United States government have been, from our earliest history, very profitable investments. The post-war market price has in every instance exceeded the price received by the government at the time of issue. Interest always has been promptly paid at the rate promised and in the medium specified. During the War of 1812 and the Civil War, when currency depreciation existed, the variations in the relative value of gold and currency at all times operated to the substantial advantage of subscribers to government loans. Civil War bonds originally paid for in depreciated paper and technically payable in "lawful money" were redeemed in coin or its equivalent.

How far the analogy between the post-war market value of previous war loans and Liberty Loans can be carried depends upon a number of factors which demand very careful consideration. For obvious reasons even the strongest nations are invariably required to give very good bargains in order to raise large sums of money during war times. In marketing Liberty Bonds the Treasury Department

could perhaps drive a harder bargain than it could during previous war periods, because of the existence of an established national credit, because of the greater possibility of an appeal to patriotism, and because of the existence of highly developed machinery for advertising and distribution. On the other hand, it was handicapped by the absolute and comparative hugeness of the amounts needed, the lack of a foreign market, and the high earning power of capital in industry. The credit of our government undoubtedly was better in the eyes of its citizens in 1917 than at the beginning of any other war. Our past record in dealing with purchasers of government obligations and our increased financial and political strength had operated to perfect confidence in the financial undertakings of the nation. During previous war periods the interest rates and other conditions were necessarily more favorable to bond subscribers than would have been necessary if more efficient means of reaching the mass of citizens had existed.

During the Civil War Jay Cooke demonstrated, on a small scale, the great value of a comprehensive system of advertising and distributing machinery in government bond selling. Political considerations prevented the Treasury Department from making the fullest possible use of his ideas and organization at that time.

The establishment of the National Banking System in 1863 was a somewhat belated attempt to improve the situation in this respect. Each great war in which this government has been engaged has called for much greater sums of money than preceding conflicts. In every instance the unexampled amounts of money required have appalled the people and caused them to

doubt the nation's ability to stand the financial strain.

In 1862 the United States government was having considerable difficulty in raising what at that time seemed like huge sums necessary to prosecute the Civil War. During this period the *London Economist* expressed its opinion of our financial future in these words:

It is utterly out of the question, in our judgment, that the Americans can obtain, either at home or in Europe, anything like the extravagant sums they are asking—for Europe will not lend them; America cannot.

The *Times* expressed conservative British opinion as follows:

No pressure that has ever threatened is equal to that that now hangs over the United States, and it may safely be said that if in future generations they faithfully meet their liabilities, they will fairly earn a fame which will shine throughout the world.

In spite of these weighty and honest opinions to the contrary we did succeed in financing the war for three more years until victory was won, and within five years after the end of the war the United States had either paid off or refunded on better terms all its obligations which were redeemable at that time.

As the people of Civil War days were appalled by a debt which after five years of fighting amounted to less than three billions, even so was there an element of doubt and distrust among the plain people of this country when in 1917 we began to figure war costs in units of ten, fifteen and even twenty billions per year. As is usual in times of stress and emergency, national financial strength was underestimated. This feeling naturally increased to some extent the difficulties of borrowing money, and the necessity for offering especially favorable terms to lenders.

It is probably true that the demand for capital in industry was stronger during the World War than during any previous war. The proportionate amount of material supplies of all kinds required was much greater than during any previous conflict and with practically the entire world at war the effective demand for products of industry was much greater than at any other period of the world's history. This industrial competition for funds would necessarily be reflected in the terms of loans offered by the government.

Post-War Value.—All these things would indicate that the terms which would secure takers for government securities during the war would be considered very favorable indeed in the post-war period. During all previous war periods the United States, as well as other great nations, has found it necessary to borrow money on terms which soon after the war were reflected in a high market price for their war-time issues. The above brief analysis of the conditions surrounding our national borrowings to finance the latest war make it seem probable that history will repeat itself in this respect.

In 1890 the average interest rate being paid on United States bonds was 4.08 per cent. By 1915 the average rate of interest had dropped to 2.37 per cent. There are two main reasons that make it seem probable that Liberty Bonds will never attain a market price which will reduce their yield as low as that paid in 1915 by the long-time obligations of our government. First, the terms of the "old" issues are, with the exception of the rate of interest, in several respects more favorable to investors than are the conditions attached to the various issues of Liberty Bonds; second, it is

possible that post-war conditions of the security market will be somewhat less favorable to government bonds than was the pre-war market. The "old" bonds have the advantage of complete tax exemption while the Liberties are subject to certain forms of national taxes if held in large blocks. The Liberty Bonds do not bear the "circulation" privilege which has given the somewhat artificial value to many earlier issues of United States bonds. In this connection it is interesting to note that an issue of 50 millions of 3 per cent Panama Canal bonds, which were not available to secure bank note circulation, was marketed in 1911 at an average price of 102.58. With the decline in importance of National Bank Note circulation it is probable that the "circulation" privilege will also decrease in importance and value.

Supply and demand effects the price of investment securities just as it controls the price of the more concrete commodities. The vast increase in the supply of investment securities, because of the huge government issues, has undoubtedly had the effect of increasing the supply of this commodity beyond the effective demand. This results in the presence of large amounts of so-called "undigested" securities. The period required for this investment demand to catch up with the present oversupply will probably be lengthened by excessive industrial competition for funds demanded by the great amount of after-the-war industrial and commercial readjustment necessary. While these conditions, and perhaps some others of lesser importance, make it seem unlikely that Liberties will completely attain the favor of the "old" issues of government securities, it should be pointed out that Liberty Bonds, because of

their higher interest rate may sell at a very substantial premium indeed, before their yield is reduced to that paid by the older issues in 1915 and previously.

A very real, if seldom realized source of profit in the purchase of government bonds, may well be expected through the operation of buying with inflated currency and taking payment of interest and capital after this war-time inflation has decreased. It is a commonly appreciated fact that the dollar today will purchase only approximately half as much in goods and service as it would in 1913-14. This, of course, means that the 1919 dollar is worth in reality only about 50 per cent as much as the 1913-14 dollar. If we exchange these "cheap" dollars for government securities now, and hold them until our currency has resumed its former value in exchange for goods, it is clear that our capital investment will be approximately doubled in real value. The possibility of profit from this source is, of course, contingent upon post-war deflation of the currency and a consequent increase of the purchasing power of the dollar.

While the question of deflation is still a subject for argument we believe that it is safe to state that the weight of intelligent opinion holds that while the purchasing power of the dollar may never return to the before-the-war basis, nevertheless, we may expect a substantial increase in the value of our currency in its relation to other commodities as industrial conditions approach to normal. The greater this deflation the greater will be the increase in the real value of the capital now invested in long-time securities.

Using as a guide, the experience of the past, modified by the changed conditions of the present, it would appear very probable that the obligations issued by the United States to finance the World War will be sufficiently attractive to cause them to sell at a substantial premium as soon as the security market is entirely adjusted to a peace-time basis. This fact combined with the probability of an increase in the purchasing power of our currency, point to a yield considerably in excess of the nominal rate of interest to those who now hold United States bonds of the recent issues.

The Development of Thrift Facilities

By MILTON HARRISON

Executive Manager, Savings Banks Association of the State of New York

MONEY SAVING AN INDEX TO THRIFT

BETTER buying, greater system in private affairs and the quality of doing without what one may desire are elements manifesting personal thrift. However, consistent saving of money must be the result of the practice of such thrift elements. The evidence of thrift is independence; independence is secured through the saving of money, but the quality of that independence must not be disregarded. To continuously stint and live only on the bare necessities of life, thereby maintaining a low standard of living, may permit a person to accumulate an amount of capital which will be sufficient to assure independence, but the quality of that independence will be exceedingly poor. Life is a tissue of habits, and if the tissue is miserly it cannot be changed at a time when the life is the tissue, and thus the means of independence can only be enjoyed by relatives, after death. High quality independence, therefore, presupposes the maintenance of a decent standard of living throughout the period of accumulation, and money saving must be consistent in order to reach real happiness during the unproductive days of life.

FACILITIES FOR MONEY SAVING

Since saving of money in the way above described is the Alpha and Omega of thrift, the establishment of adequate facilities as an aid thereto is of first importance. During the past five years the establishment of proper and adequate facilities for the saving

of money has been advancing tremendously. As a result, more of the present generation of Americans will enjoy a happier old age than those of preceding generations.

People doubtless are saving more consistently today than they ever have before. The propaganda of the Treasury Department in the encouragement of thrift has had a marked influence upon the American people. It has brought the lesson of saving to the masses of the people. The war may have been the object and the immediate reason, but the fact remains that people generally know the meaning of money saving. The present may witness undue extravagance but every person who spends, no matter how wildly the spending may be, feels a restraining force due to the lessons of thrift taught in the heat of war.

There are twice as many banks today as there were five years ago, and there are 28,000 of them in the nation, that are urging the people to save and conserve through the establishment of savings departments. It is admitted that such business is profitable to the bank, but nevertheless, money saving facilities are thereby increased. As a general principle, the adult who knows the lesson of thrift will not save unless the facilities exist directly at hand. The industrial worker will not go four blocks away from the beaten path of the plant to his home to deposit a small sum from his weekly wage, unless thrift is an inborn habit or a habit acquired at an early age or to save in order to pay an obligation that must be met.

Thus, the banks of the country, recognizing this necessity, are expanding their facilities into industrial plants but free from the influence of employers. Building or Savings and Loan Associations are being established in factories and mills. Government savings stamps and certificates are being made conveniently available to industrial workers. Plans are being made and carried out to sell railroad and municipal bonds in small denominations, as well as participation certificates secured by high-grade bonds. These bonds may be sold not alone through banks, but in drug stores and other local responsible retail stores.

Savings banks are planning to install concrete safety deposit vaults which will contain boxes of sufficient size to hold a considerable number of bonds and private papers. These will be made available to the people of small means at a very nominal sum. There is one savings bank in the Middle-west which has already contracted for the installation of a concrete vault to contain 100,000 of such boxes, to be rented as low as \$1 per year. They expect to operate the vault at a profit. Thus, savings facilities are developing satisfactorily.

SMALL SAVINGS AND CAPITAL

The savings account is simply the nurturing force in the accumulation of capital by the person of relatively small means. Its primary purpose is to promote the systematic saving of small amounts. When the account reaches several thousand dollars, it ceases to be a desirable savings account. The law of the State of New York limits the balance of a savings account in the name of any one person to \$3,000. The Connecticut law does not permit a greater aggregate deposit

by one person within one year or more than \$1,000, and \$2,000 is the limit of a savings account in Massachusetts, while New Jersey law limits the account to \$10,000. The average savings bank would rather go to the expense of caring for ten accounts of \$100 each than to carry one account of \$1,000. The deposit of small amounts is preferred to the deposit of large amounts. This is only the result of following the fundamental principle of the savings account as the nurturing force in the accumulation of capital.

INDEPENDENCE THROUGH THRIFT

In the days before the war a few thousand dollars seemed adequate to care for a person during his unproductive days; this was because the principal was used and the interest or income was disregarded. He was comfortable while the money lasted and a pauper or dependent when the principal was exhausted. Such kind of people continued to live in the city where their savings went solely to living expenses and thus \$3,000 meant meals for a few years; whereas, if the sum were invested in a small farm, and there are plenty of them available, it would mean happiness and contentment during the remainder of life. But a very small proportion of the people who have lived all their lives in a city would be content to vegetate in a village even during old age. What then is the solution of the problem? Life insurance has solved the problem of the care of dependents in the event of the death of the producer of the family income, but the care of people grown old or incapacitated must be left to the accumulation of capital from which some income may be derived, if the independence of the individual is to be maintained. It is

argued that when parents have grown old, it is the duty of the children to care for them, but this does not assure the independence of the parents and only creates a deterrent force in the progress of the children in building up their own lives. This may be counted as a selfish attitude to take but nevertheless each person is responsible for his own life and it is only one short span, wherein a person must begin early to accumulate capital for success in life and for independence in old age. The principal theme of thrift is independence.

INVESTMENT OF SMALL SAVINGS

Adequate accumulation of capital requires facilities which will absorb the capital accumulated and will return a fair rate of income. The future will have plenty of opportunity for the absorption of capital. The world will look to America for the finance of foreign governments, of foreign railroads and cities. On the other hand, the demands for capital for domestic finance will tremendously increase. It will not be long before most banks will be selling the bonds for such finance, in small denominations, over their counters on the partial payment plan. But the effort to urge the people to buy will have to be continuous and strong in order to be effective. Liberty and Victory Bond and War Savings Stamp drives may have made America a nation of bond buyers, but there is some question as to whether such drives have made America a nation of bondholders. The effort made to sell war bonds could not be paralleled in times of peace in the sale of either government bonds or other high grade issues. The people will have to be met with cold facts; only their selfish interests can be appealed

to. To produce results propagandists of saving must begin with the payment of private debts by the individual and then urge him to save, for his assets must be greater than his liabilities if there is to be any real surplus or saving.

WHERE SAVING SHOULD BEGIN

The facilities for saving must begin in the schoolhouse. There is no more effective way of teaching thrift than through the school savings bank established and operated by school children. Every school in America should install such a bank. Not a slot machine, but a real bank, with tellers, bookkeepers and even officers, all of whom should be school children. The teacher may exercise a supervision in the operation of the bank, but the children should be allowed to do the work.

The School Savings Bank.—New York City Schools have been most successful in this respect. So also have the schools of Detroit, Rochester, Minneapolis, St. Paul, Chicago, Kansas City and San Francisco. The children systematically save until they have an amount sufficient to open an account in the local bank or to buy a Government Savings Stamp. Saving money easily becomes a habit with the ordinary child and it continues throughout his life. There is no school lesson the child could learn that will produce better results than that of depositing his pennies and nickels—real money—in the school savings bank. He learns the value of money, he learns fundamental economics and it stays with him; it makes him a better student, a better business or professional man; it gives him an appreciation of the value of individual independence, which, if it were learned by all the people, would advance our civilization a thousand years. The establishment

of school savings banks is eminently important in the further development of thrift facilities.

Household Economics Departments.—Savings banks are considering increasing thrift in the home by the establishment of household economics departments. Approximately 65 per cent of savings depositors in the savings banks are women. Through advice given to such depositors by women employed by the banks who have been especially trained in household economics, homes are being financially reformed and adjusted so as to permit families to live within their incomes and thereby produce a saving in money. The correct spending of money to maintain a home requires considerable intelligence, an intelli-

gence which the housewife should have acquired at public school, instead of some non-essential learning. The household economics department of a savings bank is still in an experimental state but it will not be many years before most savings banks will be making every effort through such means to better the condition of the home, by urging the housewife to use the budget system, by urging Boards of Education to teach rudimentary principles of better buying and of the value of independence in old age.

In conclusion, the possibilities of the thrifty people of the United States are unlimited. Every safe and sound facility for the accumulation of capital must be put into operation. It is an Herculean task, but America can do it.

Coöperative Credit Institutions in the United States

By JAMES B. MORMAN

Assistant Secretary, Federal Farm Loan Board

WEALTH begins with thrift and increases as saving is practiced. In the whole organic kingdom man is the only being which stores up the fruits of labor for future use. Thrift, or saving, is at the foundation of civilization. Yea, more, it is the framework of property and the source of economic and social relations. To encourage thrift, therefore, is to promote social progress by increasing the supply of stored-up wealth for use in our democratic system of national economy.

PRODUCTION OF WEALTH

In striving to produce wealth man may either work alone or in coöperation with others. The long experience of the race, however, has demonstrated that more wealth is produced by division of labor in group production than by an equal number of individuals working separately. But it took a long time for mankind to learn this truth.

Competition—Monopoly

During much of our past history, the organization of modern business has rested on competition. What the struggle for existence is to the natural world, the law of competition is to the economic world. To eliminate competition in any particular industry is to create monopoly, a most dangerous power, the economics of which are not established on the law of supply and demand, but on the arbitrary will of the directors of the monopolistic industry. Against this

phase of social economy, the whole civilized world is now in open revolt, for to it is attributed in no small degree the great problem of the high and rising cost of living which strikes at the very foundations of national welfare and the health and happiness of the people.

Coöperation Through Division of Labor

But between competition and monopoly stands coöperation. The basis on which it rests is that of "mutual help for self-help." Its purpose is not to destroy, but to build up by combining the savings of many into a collective force for service. Fundamentally, therefore, coöperation rests on the economic basis of division of labor which increases wealth production. Its origin in modern history is very simple, beginning, it is said, in the custom of the Swiss peasantry of borrowing milk from one another to secure a sufficient quantity to make a cheese. This led to the pooling of the milk at a common center, the alternate manufacture of the cheese by the different peasants, and the final division of the products according to the quantity of milk furnished by each member of the coöperating group. The mutual help thus rendered was found not only to save the waste of individual small supplies of milk which taken alone would not be sufficient for the making of cheese, but to bring greater returns at less loss and less labor than an individual could expect or secure if producing milk and making cheese alone.

Society as constituted today is divided into "rural" and "urban" population. The rural workers are engaged in the production of wealth from the soil to provide food and the raw materials of many textile manufactures. On the other hand the workers in towns and cities, grouped as "urban," are largely engaged in industrial pursuits which work up the raw materials produced on the farms into finished products. Here, then, we have the mutual relations of both groups of our population clearly indicated showing the interdependence of one class of the people on another class which results in benefits to both. Taken in its broadest aspects, civilization is progressive coöperation in the production and distribution of those things which make for the health, the wealth, and the happiness of all the people.

THRIFT THROUGH COÖPERATIVE CREDIT INSTITUTIONS

The four primary needs of mankind are food, fuel, clothing and shelter. The masses of humanity born into the world must earn these things by their own labor. With growth in population and civilization, a house, which provides shelter, becomes costly and the average worker would be unable to occupy a home which he could call his own if some method of coöperation did not exist which enables him to buy a place and pay for it out of his savings. Such a system, however, has been devised and is called "coöperative credit."

The institutions primarily supplying this form of credit are known as Building and Loan Associations. These are mentioned first because they have been in existence longer than those institutions which pro-

vide credit facilities for rural workers. In either case the need of credit and credit institutions is based on the same fundamental principle, namely, the mutual aid furnished through coöperative effort as a means of self-help to every individual member of the organization.

In view of the financial and economic problems now confronting our country, probably no theme is more timely than that of pointing out how coöperative credit institutions encourage thrift among all classes of people in the United States.

Building and Loan Associations¹

In some respects the building and loan associations are the greatest coöperative financial system in the world. They began in 1831, and from that time to the present they have had a steady growth through private enterprise and mutual self-help. As generally understood a building and loan association is an incorporated institution with a capital which may be increased or decreased by the issue or cancellation of shares, or by payment or withdrawal of payment on shares. The original source of this capital is the savings of members, and the purpose is to make loans to members for building or acquiring homes. The owning of homes being an encouragement to thrift, building and loan associations are exempt from taxation on the ground that their purpose is considered a benevolent one and that it promotes the welfare of communities in which they are located.

¹ For more detailed accounts see Senate Doc. 396, 64th Cong., 1st Sess., pp. 24-32; Secretary's Annual Report, United States League of Local Building and Loan Associations (Cincinnati) for 1918.

In accordance with coöperative principles, these associations are administered by their members at a mere nominal cost. They have a limited territory, the membership is not large, and the subscribers to shares are mostly people of only moderate means. In carrying out the principles of building and loan associations the aim is to encourage co-operation in local community life. For this reason each association should be self-sustaining and with a membership only large enough for all to attend meetings regularly and watch over its affairs.

Funds are provided by accepting the savings of members and investors. Each association issues and sells shares which are mainly of two kinds—installment shares and investment shares.

On *installment* shares the subscriber makes his payments at stated intervals. These are the ones in general use for loan transactions. A borrower subscribes for shares in an amount equal to his loan, a first mortgage is given on the property on which the loan is made, and the shares are pledged to the association as additional security for the loan. Payments made by members are applied on a share until paid off, and each share is credited with its portion of the profits. Borrowers in reality, therefore, receive interest to a limited extent on their own debts, a result attributed entirely to the principle of coöperative credit. At maturity a borrower's shares are canceled,—that is, when his payments equal his debts; and his mortgage is canceled with his pledged shares. The latter can at no time be withdrawn during the period of the loan.

The installment share was origi-

nally the only kind issued and created an obligation to keep up regular payments until maturity. In effect, therefore, it requires self-imposed compulsory thrift or saving which inculcates the habits of frugality and economy on the part of borrowers. In this day of extravagance, waste and high living, the habits inculcated through building and loan associations are worthy of being given broad publicity in the interests of our national welfare.

On *investment* shares the subscriber may make one payment in full or he may make several partial payments at stated periods to suit his convenience, and he may subscribe for as few or as many shares as he pleases. At maturity the shares are canceled, and in the case of a non-borrowing member the face value of his shares is paid to him in cash. Pledged shares by borrowers cannot be withdrawn until the loan has been paid, but the credits on investment or "free" shares may be withdrawn ordinarily on sixty days' notice.

Since the only credit instruments of a pure form of building and loan association are its shares, loans can only be made as fast as savings accumulate. This difficulty is inherent in the coöperative method of providing credit, but it is well understood by the members who realize that it cannot be changed without destroying the coöperative feature. As a matter of fact very serious consequences have more than once followed when building and loan associations deviated from the straight and narrow path of coöperative credit. The most dangerous departure from these principles was the right accorded in some states to use the credit as well as the cash of members for

the issue of bonds or other debt obligations. In the last quarter of the nineteenth century there were many failures of these associations due largely to the fact that the laws did not always require adequate supervision, that large associations were formed by persons who had no correct knowledge of the limitations of coöperation, and that the average officials were unfamiliar with intricate financial methods.

Evidently, then, a building and loan association when it conforms to its original concept, is distinctively a thrift society, whether considered from the standpoint of the borrower or the investor. The compulsory periodical saving which it requires of members gives it the character of a thrift institution to a greater extent than is possessed by a mutual savings bank or similar institution, and the safeguards thrown around the investment of its funds make it one of the sanest and safest institutions for homebuilding by persons of moderate income. Its methods are strictly coöperative, the only creditors are its own members, and it is managed and financed exclusively by them.

That building and loan associations have encouraged thrift, both before and during the World War, may be shown by the following figures: There were in the United States in 1914 no less than 6,429 associations having a membership of 2,836,433 and a share capital of \$1,248,479,139. This means that there was one member for every 13.45 persons engaged in gainful occupations, for every 7.14 census families, or for every 2.55 urban dwellings. Financially considered, it means, \$1.00 of assets for every \$13.91 of individual deposits in all banks in the United States. That the World War

did not diminish thrift but rather encouraged it may be shown by the following figures for December 31, 1918, as compared with those for 1914: Number of associations 7,484; membership 4,011,401; and assets aggregating \$1,898,344,346. Well may it be said of this kind of coöperative credit institution: "By their fruits ye shall know them."

A Proposed Federal Home Building Plan.²

The well-recognized merits of building and loan associations have led to a proposal to establish a federal system. On July 15, 1919, Senator W. M. Calder, of New York, introduced "a bill among the objects of which are to encourage home ownership and to stimulate the buying and building of homes"; and "to create a standard form of investment based on building-association mortgages."

This bill was referred to the Senate Committee on Banking and Currency, but no report had been made thereon up to October 20. I shall content myself, therefore, with presenting the merest outline of this proposed plan for encouraging home building, because of the changes which are likely to occur when a measure of this kind passes through the troubled waters of legislative criticism.

In its general outlines this bill follows closely the provisions of the Federal Farm Loan Act, the coöperative feature of which is described later in this paper. It provides for dividing the continental United States into eleven federal building loan bank districts and the establishment of a bank in each district which shall make loans to "building associations"

² Senate Bill 2492, 66th Cong., 1st Session.

for the purpose of encouraging home building by wage-earners and others. The term "building association," however, is defined broadly to include "all duly incorporated domestic building and loan associations, savings and loan associations, coöperative banks, homestead aid, or other kindred incorporated associations organized and conducted exclusively for the mutual benefit of their members and doing what is generally known as a coöperative building and loan association business," and which are under state supervision.

The establishment of a federal building loan bank is provided for in the following manner: Whenever ten or more building associations located within a district, with aggregate assets of not less than \$5,000,000, shall associate themselves together for the purpose for which they are organized, they may establish a federal building loan bank in their district with a paid-in capital of not less than \$100,000 in shares of \$1,000 each. This capital may be loaned to building associations on first mortgages on dwelling houses, no other security being acceptable, said mortgages being deposited with a registrar as security for an issue of bonds in equal amount.

Bonds may be issued up to twenty times the capital of a federal building loan bank and funds may be advanced to any member association up to twenty times the amount of the capital stock owned by such member. The rate of interest on bonds, which are tax-exempt, cannot exceed $4\frac{1}{2}$ per cent, and the compensation to the bank for services may not exceed $\frac{1}{2}$ per cent. The interest rate on funds advanced to the associations, there-

fore, cannot exceed 5 per cent. After paying expenses and providing for a reserve account, the banks may declare dividends to shareholders of the whole or part of its net earnings and carried as undivided profits.

Here, then, we have a plan for the coöperation of coöperatives in which building and loan associations within a given district may pool their credit for mutual benefit. The scheme is largely patterned after the Land Bank of the state of New York, which, however, has made little or no progress since 1914. Many objections have been raised against the New York plan of financing the savings and loan associations of that state; and whether or not these difficulties could be overcome if a similar institution were established under federal fostering and supervision is problematical. Inasmuch as the federal plan for establishing coöperative credit institutions is in an embryonic condition, the problems connected therewith may be left for solution should that time ever come.

Credit Unions—Urban and Rural

Turning from the strictly urban aspect of coöperative credit, as represented by building and loan associations, let us now consider types of institutions which, beginning as urban, have become semi-rural or strictly rural in character. These institutions are called "people's banks" in Canada and "credit unions" in the United States.³

While the *people's banks* were originally organized in Canada to lend small sums to members on personal

³ For a more detailed account of these coöperative credit institutions, see Morman's *The Principles of Rural Credits*, pp. 263-275.

security in the towns and cities of Quebec, the percentage of their membership is now so overwhelmingly composed of farmers,—90 per cent being farmers and 10 per cent wage-earners,—that the name could well be changed to “rural banks.” In passing over into the United States, the modification brought about in their character led to the adoption of the name of *credit unions*, the aim of which was to make short-time loans to members on chattels. That both types of credit institution were intended to promote thrift may be shown by a brief account of their origin and development.

The people's banks in Canada owe their origin and success to the untiring energy of Alphonse Desjardins. The first bank was established at Levis, Quebec, beginning operations in January, 1901. From Quebec these banks spread to Ontario and have even made their way into some of the New England states.

The capital of each bank is raised by selling shares at \$5 each and by receiving deposits, on which savings-bank interest rates are paid. Stockholders are free from liability—a departure from the European system. Deposits can be withdrawn at will, or by giving thirty days' notice at the utmost. Shares of stock may be paid for by small installments. Every applicant for membership has to be approved by a council of administration, the by-laws requiring that the applicant must be honest, punctual in his payments, sober, of good habits, and industrious. Each bank is carried on by three committees. The council of administration controls the admission to membership, supervises the transfer or withdrawal of stock,

selects the manager who alone draws a salary, and overlooks the management of the business. The credit committee determines the amount of credit each member can receive and passes on all applications for loans. The council of supervision audits the accounts and has general supervision over the bank. A reserve fund is built up by means of 20 per cent of each year's profits and a membership fee of 10 cents; and the reserve fund is protected by a providence fund, raised by taking 10 per cent of the annual profits, which is designed to meet any calls that threaten the bank's stability. Loans usually run between \$10 and \$150, although larger loans are sometimes made, the rate of interest being about 6 per cent. These institutions do business within a limited area where everyone is known to all the shareholders, and where every shareholder is interested in the repayment of loans.

These are the general principles which regulate the activities of the coöperative personal credit institutions in Canada and the United States. They have been eminently successful in the Dominion where more than 150 have been organized since 1906 with more than 66,000 members; and, notwithstanding they are small institutions making small loans, the business transacted amounts to nearly \$9,000,000 a year. As a means of encouraging thrift among small farmers and poorer-paid classes of wage-earners, the Desjardins' type of semi-rural coöperative bank, in which farmer and wage-earner can unite their savings to lend to others of their own class, affords a good opportunity for supplying cheap money for short-time loans on personal or

chattel security. But their success has undoubtedly been due to the real coöperative spirit existing among the members.⁴

Turning from Canada to the United States we find that credit unions have been organized as separate institutions in both city and country. In the states of Massachusetts and New York a considerable number have been organized in various cities among the working-classes, Massachusetts alone reporting 50 urban credit unions in 1916.

Rural Credit Unions.—During the past few years, however, more attention has been given to organizing credit unions among farmers, these rural credit unions now serving as supplemental institutions to the federal farm loan system which provides farm mortgage loans only, the coöperative feature of which is outlined and discussed in the following section. The original plan of rural credits legislation in the United States included both short-time (personal) and long-time (mortgage) credit, but no legislation on personal rural credit has ever been seriously considered in Congress. To a very limited extent, therefore, the organization of credit unions among farmers has occupied this neglected field of personal or short-time credit. The following are the principal data on rural credit unions as reported in 1916:

State	Number of unions	Members	Out-standing loans
Massachusetts...	1	44	\$1,685.00
Connecticut....	5	127	7,865.25
New York.....	8	261	10,700.45
New Jersey.....	5	132	6,984.80
North Carolina..	9	322	4,031.20
			\$31,266.70

The security given by members for loans in rural credit unions is either chattel mortgage or endorsement, and the prevailing rate of interest is 6 per cent. In the latter case a farmer in order to borrow money must know two or three neighbors who are willing to sign a note with him. But both the borrower and his indorsers must be known to the credit committee of the union or a loan will not be granted. Through living close together they learn the habits of thrift, industry and honesty of borrower and indorsers.

The greatest number of rural credit unions have been organized in North Carolina, the State Department of Agriculture supervising the work. The credit unions among farmers in the other states mentioned above have all been organized with the aid of the Jewish Agricultural and Industrial Aid Society.

The effect of the war on the development of rural credit unions has not resulted in increasing their number except in North Carolina, where the state has taken an active interest in the organization and success of these institutions. This is not to be interpreted, however, to mean that the war has been detrimental to the encouragement of thrift among farmers. It is more than likely that the increased prosperity during the past three years has enabled those farmers

⁴ In a letter to the writer under date of October 11, 1919, Mr. Desjardins says: "With reference to the development of thrift as one of the effects of the World War, I can assure you that the movement has greatly increased, so much so that since 1916 the total amount deposited in our credit unions has more than doubled, although the number of credit unions has not materially increased during that time."

who were formerly members of credit unions to pay off their loans and thereby were automatically released from membership. This is likely to be the reason for the status of credit unions among farmers August 31, 1919, as reported by the United States Department of Agriculture, which is summarized as follows:

According to the latest report of the Jewish Agricultural and Industrial Aid Society, several of the rural credit unions in New York have been obliged to wind up their affairs. In place of the eight credit unions among farmers reported in 1916, only three now exist in that state, and no mention is made regarding the present status of the credit unions among Jewish farmers in the states of Connecticut and Massachusetts. On the other hand the report from the superintendent of rural credit unions in North Carolina shows that they then numbered 28, with a total membership of 980, and with outstanding loans aggregating \$38,164. This would seem to indicate that North Carolina is the only state where any considerable progress has been made in the development of credit unions among farmers.

Summing up the situation as to both kinds of credit unions, they are known to be excellent local savings banks, stimulating thrift, bringing out hoarded money, and conferring on local communities the benefits of properly and safely invested money. However small a village or a farming community may be, it can organize a credit union, give to its inhabitants the benefits of banking, and extend the practice of thrift to every home in the locality. Such a credit union borrows from its members by accepting savings deposits and lends to other members for productive purposes. The fundamental principle is that thrift precedes savings and credit. The general tendency of these simple institutions is to develop individual capacity for a higher personal and

public life. There is every reason, therefore, for encouraging the organization of credit unions in every well-defined community in the United States.

Federal Coöperative Farm Mortgage Credit

The last type of credit institution of a coöperative character to be described forms a very important feature of the federal farm loan system. This new method of making farm mortgage loans includes both individualist and coöperative features. Both have materially aided in improving farm mortgage credit conditions and have a very important relation to our national welfare. In conformity to my topic, however, I shall confine myself more particularly to presenting facts and figures on coöperative farm mortgage credit.⁵

The Federal Farm Loan Act went into effect on July 17, 1916, the day it was signed by President Wilson. The primary object of the law was to provide capital for agricultural development, the money to be loaned to farmers for productive purposes at a low rate of interest. Only first mortgage loans could be made on farms or farm lands, and two kinds of land banks were authorized to make these loans. One kind is known as *Federal Land Banks*, which make loans to farmers through "agents" or through national farm loan associations, a coöperative organization; the other is known as *Joint Stock Land Banks* which are operated by private capital for lending money to individual farmers.

⁵ For an extended discussion of the relation of rural credits to national welfare, see Chapters XI-XIII, inclusive, of the author's recent work on *The Place of Agriculture in Reconstruction*.

Twelve Federal Land Banks were organized largely by government capital, the amount subscribed by the government being \$8,891,270 out of the minimum of \$9,000,000 authorized. The balance of the capital was subscribed by private individuals. The aid furnished by the government in establishing this coöperative system consists in supplying the capital *without interest*. This capital, however, is to be repaid and part of it has already been paid back by the Federal Land Banks.

National farm loan associations may be organized in any locality with not less than ten members whose subscriptions for loans cannot be less than \$20,000. Loans are made at 5½ per cent interest, range from \$100 to \$10,000, and on the amortization plan of repayment. The associations are chartered by the Federal Farm Loan Board.

The primary coöperative feature is community organization for borrowing on land security, but there is not unlimited land liability. Individual mortgages are given for the payments on which each borrower alone is responsible. The coöperative liability lies in the subscription to stock in the association equaling 5 per cent of each loan which, however, becomes an investment and receives dividends from the Federal Land Banks. The money subscribed for stock in the association by the borrowers is re-subscribed by the association in stock of the Federal Land Bank, the stock being held by the bank as additional security for the loans made through the associations. On September 30, 1919, the capital of the twelve Federal Land Banks aggregated \$21,387,689, of which amount \$13,032,860 was

owned by the national farm loan associations.

The first loans were made on March 27, 1917, so that on September 30, 1919, the system had been in active operation practically two and one half years. The rapid growth of this coöperative plan of farm mortgage credit may be realized by a study of the following table which gives by states the number of associations chartered, number of loans granted, and the total amount of loans:

The coöperative feature of the federal farm loan system was originally designed not only to aid farmers to procure better credit facilities, but to encourage thrift among all classes of the rural population by furnishing a savings-bank institution in the form of a national farm loan association. This feature, if carried out and developed, might well serve as a nucleus for the organization of a rural credit union for making short-time personal loans to farmers. I present this as a new suggestion in connection with the thrift campaign and which may serve a very useful purpose in our rural social economy.

Under the law national farm loan associations may receive savings deposits from both members and non-members for the purchase of farm loan bonds.⁶ Anyone who may have a few dollars saved may start a savings account with an association for this purpose. A certificate is granted which states the amount of money so deposited, and the savings may bear interest for one year as high as 4 per cent. These deposits are sent to the Federal Land Bank of the district for investment in bonds or first mortgages.

⁶ See Federal Farm Loan Act, Sec. 11, subd. 4.

NUMBER OF NATIONAL FARM LOAN ASSOCIATIONS CHARTERED, TOGETHER WITH THE NUMBER AND TOTAL AMOUNT OF LOANS MADE IN EACH STATE FROM THE ORGANIZATION OF THE FEDERAL FARM LOAN SYSTEM TO SEPTEMBER 30, 1919

District and State	Number of national farm loan associations chartered	Number of loans made	Total amount loaned
District No. 1:			
Maine.....	16	511	\$ 1,062,550
New Hampshire.....	6	147	312,900
Vermont.....	11	306	785,500
Massachusetts.....	17	591	1,488,605
Rhode Island.....	2	50	118,400
Connecticut.....	15	390	1,201,600
New York.....	42	1,351	4,142,740
New Jersey.....	17	240	801,250
District No. 2:			
Pennsylvania.....	45	864	2,262,900
Virginia.....	75	2,392	6,341,850
West Virginia.....	24	627	1,137,650
Maryland.....	14	204	634,700
Delaware.....	1	12	24,500
District No. 3:			
North Carolina.....	128	2,610	4,635,550
South Carolina.....	100	1,631	4,387,090
Georgia.....	65	945	2,454,285
Florida.....	68	1,371	2,414,120
District No. 4:			
Tennessee.....	112	1,966	4,881,500
Kentucky.....	81	1,378	3,458,700
Indiana.....	90	2,361	7,913,300
Ohio.....	35	527	1,706,400
District No. 5:			
Alabama.....	107	3,413	5,752,445
Louisiana.....	68	2,589	4,180,490
Mississippi.....	141	6,493	8,259,570
District No. 6:			
Illinois.....	112	1,711	6,622,835
Missouri.....	134	2,609	7,006,900
Arkansas.....	137	4,757	7,266,205
District No. 7:			
North Dakota.....	169	5,119	15,339,300
Minnesota.....	144	3,117	9,318,200
Wisconsin.....	86	1,797	4,093,400
Michigan.....	117	2,699	4,855,000
District No. 8:			
Iowa.....	134	2,475	17,410,250
Nebraska.....	125	2,514	10,506,990
South Dakota.....	79	1,615	6,500,950
Wyoming.....	22	443	972,100
District No. 9:			
Kansas.....	129	3,082	10,771,500
Oklahoma.....	119	2,587	5,099,100
Colorado.....	130	2,395	4,591,000
New Mexico.....	81	1,869	2,350,200
District No. 10:			
Texas.....	320	10,212	23,666,561
District No. 11:			
California.....	113	2,869	9,315,500
Utah.....	59	1,407	3,973,800
Nevada.....	3	38	172,600
Arizona.....	9	232	603,500
District No. 12:			
Idaho.....	75	2,412	6,789,295
Montana.....	132	4,058	9,949,640
Oregon.....	91	3,018	8,715,180
Washington.....	153	4,408	9,426,745
Total.....	3,953	100,412	\$261,175,346

The object of restricting the savings-bank interest to one year is to encourage the exchange of certificates into farm loan bonds.

Under a recent amendment to the Farm Loan Act which has passed the House of Representatives bonds for small investors are issued at \$20, \$40 and \$100; for large investors at \$500, \$1,000, or larger denominations. When the money deposited with an association is sent to the Land Bank, it is invested for the benefit of the holder of the association certificate in first mortgages on farms, and such holder may receive farm loan bonds in exchange for association certificates whenever presented in an amount sufficient to buy a bond. These bonds make a safe investment for small savings as they draw interest at $4\frac{1}{2}$ per cent.

Under the conservative plan of land appraisal and granting of a loan up to 50 per cent of the value of the land for agricultural productive purposes,—as well as the careful government supervision over loans, the associations, and the Land Banks,—no better security exists in the world than farm loan bonds. And this will

hold true no matter if the present tax-exempt feature which now exists under the law should be removed from these bonds as has been proposed. Consequently, depositors, borrowers and investors all benefit under this system. This particular feature of farm loan associations receiving deposits, notwithstanding the fact that it has not yet developed to any extent, could be made to serve a very useful purpose by encouraging thrift among all classes of our rural population and by developing a more general spirit of coöperation which could express itself in the form of rural credit unions organized in every county throughout the length and breadth of our land.

Even as it is today, with its farm mortgage coöperative feature predominant, the results of the federal farm loan system have been perfectly wonderful in encouraging agriculture, promoting thrift, and extending credit. It stands as the greatest coöperative farm mortgage credit system in existence—a monument of lasting merit to the great industry of agriculture in our own country, the greatest credit nation in the world.

Life Insurance in Its Relation to Thrift

By S. S. HUEBNER

Professor of Insurance, University of Pennsylvania

THE PURPOSE OF LIFE INSURANCE

THE fundamental purpose of life insurance is the capitalization of the value of a human life, and through this means the protection of dependents or business interests against the loss of the value of that life through premature death.¹ But while this is its primary object, life insurance also accomplishes a very important secondary purpose, viz., the promotion and protection of thrift. No other business institution bears so many important relations to saving. At least four of these relationships deserve special mention, and as regards most of them life insurance is unique in its

¹Emphasis should be placed upon the value of human life as contrasted with the value of mere property. The productive lives in any community constitute by far its greatest economic value. It is the purpose of life insurance to capitalize this value for the benefit of the insured's family or business. For years we have developed a science, "corporation finance," which deals with the capitalization of lands, buildings, equipment, and good will. But it is only in recent years that our thoughts have turned to the incorporation of human life values, and life insurance furnishes the only known method of capitalizing the producing value of a life. The analogy between life insurance and corporation finance is complete. Life insurance is corporation finance applied to human values. From the moment the policy is issued an estate has been created. A life insurance policy is a *callable sinking fund* bond issued upon the life of the policy holder. It will be paid if Providence calls the policy holder. In case there should not be a call, the bond will also be paid through the accumulation of its *sinking fund* provision, or the *reserve* as it is commonly called. Live or die, payment of the bond is a certainty. The value of the earning capacity of the life has been capitalized, and should premature death destroy

service and unapproached by any competitor.

1. LIFE INSURANCE PROTECTS THE SAVING PERIOD

A common objection against life insurance may be stated as follows: "I do not believe in life insurance, I believe in saving, and I can make and save more in other ways." The answer to this objection is that life insurance alone makes saving feasible for the great majority of people. If possible, both insurance and saving in other ways should be practiced. But to start on a plan of saving (outside of life insurance), where a dependent family exists, without hedging against the

this value the proceeds of the life insurance policy will act as a substitute to continue, in a measure at least, the former earning capacity of the deceased.

The *protective* feature of life insurance, and for that matter of all forms of insurance, has received too little emphasis from economists. Their efforts have been confined mainly to a discussion of the problems connected with production, distribution and consumption, and a review of leading text-books on economics indicates the authors' difficulty in assigning insurance to some one of the standard divisions of the science. Often the subject is treated merely in an appended chapter. Insurance cannot logically be placed in any of the aforementioned categories. It partakes somewhat of all, it is true, but its real place is in a separate division of economic science, viz., the *elimination of risk*. The real function of all insurance is the *elimination of risk* in our economic activities. It is to be hoped that our text-books on economics will soon assign to insurance the separate division that its distinct function in our economic life so well warrants. Elimination of risk, as here suggested, contemplates not only the many commercial forms of personal and property

uncertainty of having the saving period cut short by an untimely death, is for the overwhelming majority of people an act of wanton foolishness and gambling.

It is easy to make a resolution to save \$10,000 in 20 years by ways other than life insurance. But let us not forget that we are only human beings and that the fulfillment of a resolution is on the average a very doubtful product of a somewhat frail and exaggerated mentality. Assuming the sincerity of the resolution, there are three great obstacles that should always be borne in mind. In the first place, what right has a man with dependents to say, "I will save \$10,000 in 20 years," when he does not know that that number of years—yes, even one year—will be given to him. The mortality table shows that out of 85,441 persons 30 years of age, 720 will be cut short in their effort to save the above \$10,000, in the first year of the trial; and in all 15,637 will fail to accomplish their purpose in the set time of 20 years through premature death.

But death is not the only factor that may defeat the carrying out of a resolution to save. Let us not forget that a resolution to save, even eliminating the chance of premature death, is confronted by two other great dangers: (1) lack of will power to continue the plan (the resolution being more often ended in this way than by death) and (2) failure to keep intact what may have been saved, owing to bad investment, speculation, or tempting expend-

itures. Let us not forget that only about one adult in ten manages to accumulate a fairly decent competency, and that one half of the limited number who succeed in doing so again lose the same before death.

The three pitfalls just mentioned may be easily avoided through the use of life insurance which assures an estate—live or die—equal to the full face value of the \$10,000 promise, as soon as the first premium is paid. In other words life insurance insures the resolution to save the \$10,000 in 20 years. An illustration of a 20-year \$10,000 endowment policy will serve to make this clear. Such a policy promises \$10,000 at any time in the event of death during the 20-year period, and also the payment of the same sum at the end of the 20-year period in the event of survival, i.e., \$10,000 is promised, live or die. An analysis of this contract shows that it is composed of two distinct portions, each supplementing the other. One portion represents a savings bank accumulation which is available at any time (after the second or third premium is paid) to the insured through surrender of the policy or at the maturity of the contract. But this savings feature is supplemented by term insurance (the other portion) which is, however, not a level term insurance of \$10,000 at any time, but an insurance of an amount, which added to the investment accumulated in the savings fund at the time of death will make the amount of the policy payable equal \$10,000. The term insurance portion of the contract is for a decreasing amount, being nearly equal to the full face value of the policy at the start, and gradually decreasing throughout the term of the contract. Thus, if at a particular time

insurance, but also the numerous other economic devices which accomplish the same economic function, such as "continuous organized markets," "hedging" in our produce and security markets, "options," "future contracts," "short selling," "stop loss orders," etc.

the savings portion of the endowment policy has accumulated to \$1,000, the insured will be protected by \$9,000 of term insurance. In the event of death, the insurance company will pay the saving accumulation of \$1,000 plus the term insurance of \$9,000, or a total of \$10,000. In other words the insurance company agrees always to make good the difference between the amount actually saved (in this case \$1,000) and the originally proposed estate which the insured was not given time to save (in this case \$10,000), or \$9,000. Had the insured relied upon other methods of saving, he would have left a pittance of \$1,000, a sum totally out of accord with duty and good citizenship where a dependent family is at stake. When the accumulation under our policy reaches \$5,000 there will be term insurance for only \$5,000. Finally, at the end of the 20-year period, the savings fund will have grown to the full face value of the policy of \$10,000, and the term insurance protection will have been reduced to zero. The original resolution having been fulfilled, the insurance protection necessary to protect the saving period is now no longer needed; and the insurance company will pay the full sum, or continue to hold the same in trust at the option of the insured.

The premium for the policy may be divided into two distinct parts, one part for the savings or investment fund, and the other for the decreasing term insurance. It should here be noted that all life policies, other than mere term contracts, are endowment policies. The 20-year endowment policy, for example, accumulates a savings fund which will equal the face value of the policy at the end of 20 years, the same then being paid to the insured. A whole life policy, on

the other hand, is also an endowment policy maturing at age 96, i.e., the savings fund in a whole life policy gradually accumulates to the full face value of the policy at the end of life, which is 96 according to the American experience table. At that time the policy will be paid although actual death may not have occurred. In a long term endowment policy, at any given age, the savings fund is so arranged as to accumulate gradually to the full face value of the policy at say, age 65, the age of retirement, or as it might more properly be called, the age at which economic death occurs.

Protection of the saving period is the most important relationship of life insurance to saving. In our illustration, life insurance was used for a two-fold purpose, viz., to save as well as to protect the saving period. But even where the saving is effected outside of life insurance it is highly essential to use some kind of a life insurance policy to protect the saving period, although it be only a pure term insurance policy. Every building and loan association account should be hedged; otherwise great distress may result in case an untimely death cuts short the saving account to a mere pittance. Every mortgage on a home or a small business should likewise be hedged with life insurance. Briefly stated the insurance proceeds, in the event of death, serve to complete the building and loan association account or the payment of the mortgage. Moreover where earnings are reinvested in a business enterprise, especially during the early years of development, or where the business is of a speculative nature, such investment should be protected against loss through the capitalization of the value of the life that constitutes the backbone of the business venture.

2. LIFE INSURANCE IS SAVING

The above illustration should make it clear that life insurance policies, other than ordinary term policies, contain an important savings feature. At the close of 1917 such savings held in trust for policy holders by 241 American life insurance companies aggregated \$6,000,000,000, and the gain in the savings for the year exceeded \$400,000,000, or at the rate of \$141,801 for every working hour of the year (assuming an eight hour day), \$2,364 every working minute and \$39 every working second. This showing has been greatly exceeded since 1917, although exact figures are not yet available. As a matter of fact, life insurance is distancing all other savings institutions. The savings accumulations of the 241 regular life insurance companies at the close of 1917 were three and one third times the combined assets of the 7,269 building and loan associations in the United States as reported to the annual meeting of the United States League of Local Building and Loan Associations. The gain in the savings of these insurance companies during 1917 amounted to nearly three times the total gain in assets for all the building and loan associations of the country. Moreover, the savings for policy holders held by these insurance companies exceeded the total deposits of all the 1,807 savings banks of the country by \$467,000,000. The gain in the savings of the companies during 1917 amounted to nearly one and one third times the total gain in the deposits of all the savings banks in the country.

All these immense savings are earning a very fair rate of interest considering the safety of the investment. Past experience shows that life insurance

companies have earned on the savings held for policy holders the largest interest return consistent with safety. During 1917 the interest earned on all the mean invested funds of the 38 leading companies was 4.94 per cent; while the average annual interest return for 20 years (1898-1917) was 4.80 per cent.

Not only is the rate of earnings very substantial, but, judging from the solvency record of insurance companies, the security of the savings held is the very best. Very rarely is there a failure of a life insurance company after it has once passed through the stage of initial development. Even in the case of newly formed companies, the insolvency record shows an inconsequential loss of savings. This may be illustrated by the record for the decade 1905-14, a wholly abnormal period in life insurance history which was characterized, as probably never before, by a craze for forming new companies. During that decade 55 companies suspended operations, but all died during infancy, the average age of these companies being four years. The combined insurance of all the failing companies was only \$139,500,000,² and of this all except \$1,033,000 was reinsured in other companies. In other words only one dollar out of every \$140 of protection carried by the suspending companies was lost; but even here the policy holders had returned to them the full cash value (the savings) of their policies. The reasons for such stability are not difficult to comprehend. In the first place, life insurance "is based on nature's law of mortality." A sinking fund is accumulated in advance for all

² The combined insurance carried by all the regular companies exceeded \$27,000,000,000 at the close of 1917.

future payments as per the requirements of a conservative mortality table, and the acceptance of risks is based on a medical selection. Moreover, no other business is so stringently regulated and supervised by the state. A drastic record of solvency is required by law, and investments, commissions, expenses, and important practices are dictated by statute. The investments of the companies are also so widely scattered as to kind, class, and location that a possible loss in one investment is counter-balanced by a gain in other directions.

3. LIFE INSURANCE REPRESENTS COMPULSORY AND CONVENIENT SAVING

The regular payment of the premium from year to year will soon be looked upon by the insured in much the same manner as he comes to regard interest upon a mortgage. Consequently, to secure the necessary funds to pay the premium, his industry will be considerably enhanced, or his efforts to save the required premiums out of income will be increased. It is the common assertion of individuals who hold life insurance policies that they became the possessors of a considerable sum of money which, under other circumstances, they would never have accumulated, or which, if they had done so, would have been lost or dissipated. Life insurance causes policy holders to stick more steadfastly to their resolution to save than do other agencies for the inculcation of thrift. When once started, the desire to remain protected through insurance acts as a powerful spur to continue the savings feature. The regular payment of premiums soon strengthens the policy holder's ability to save and soon moulds his thought in the right way. Not only is the saving habit developed through life insurance,

but the insured's effort to acquire the where-with-all is also increased. When the necessity of insurance protection is once recognized, household and personal expenses are soon adjusted to the necessity of paying the premiums.

Saving under life insurance policies is also convenient, the method being admirably adapted to the placing of small sums to prompt and profitable use. The premiums may be paid in installments, if desired, and every dollar deposited with the company begins immediately to earn interest. It is for this reason that life insurance has been called "compound interest in harness." The average investor cannot invest his small savings as regularly as can the insurance company. For the average person a life insurance policy represents the accumulation of small sums (which in all probability would not otherwise be accumulated) over a long period of years into a substantial total. Stated in another way, life insurance bears the relationship to thrift that the modern utilization of by-products (largely wasted in former years) bears to many of our leading manufacturing enterprises today. The periodic dribbles—the premiums—are not particularly missed by the insured. In fact they were earned—and otherwise would probably not have been—in anticipation of the due date of the premium; and had they been otherwise earned it may be doubted whether they would have been saved; and had they been saved it may be doubted whether they would have earned a fairer rate of interest elsewhere. The present savings held in trust for policy holders by the regular companies aggregate some \$6,000,000,000. It is doubtful whether one fifth of this huge sum of capital would be in existence today if it had not been for the com-

pulsory and systematic influence upon saving exerted by the life insurance method.

4. LIFE INSURANCE PROTECTS AGAINST THE HAZARD OF OUTLIVING ONE'S INCOME

Assuming the efficiency of the protective and compulsory savings features of life insurance, the thinking public is rapidly coming to recognize the desirability of conserving the principal of a life insurance policy against the modern tendencies of reckless expenditure or loss through speculation or unfortunate investment. To assure an income for life, it is now common to issue policies on the "income plan." This means that the principal of the insurance, instead of being given to the beneficiary in a lump sum, will be paid in installments for a definite number of years, like 20 years, irrespective of whether the beneficiary lives that long or not, and for as many years thereafter as the beneficiary may survive. In this way a definite income is assured as long as it may be needed by the beneficiary, i.e., for life. The insurance company becomes the trustee of the principal of the policy. Judged by a mortality table the average life of beneficiaries, at any given age, is well known. Therefore, the beneficiary may be promised an annual or monthly income for life, and the amount promised will be derived from two sources, viz., (1) a portion of the principal itself, and (2) the interest earned on the balance of the principal remaining with the company after the payment of each installment.

The same function is performed by annuities, which may be defined as contracts, whereby for a cash payment the insurance company agrees to pay

the annuitant a definite income for life. Their purpose is to protect against the hazard of outliving one's income, and at the same time to increase the income to an extent which contemplates the gradual exhaustion of the principal itself.

To illustrate the manner in which annuities permit the utilization of savings for old-age support, let us assume that a man aged 65 possesses \$15,000, and that this fund constitutes his sole means of support. If invested in the most careful manner, let us say in "gilt-edged bonds," so as to avoid any danger of loss, the current rate of return will not exceed 5 per cent, thus limiting the owner's income to \$750 a year. This amount may prove woefully inadequate for proper support, yet the owner, not knowing how long he may live, does not feel that he can afford to take a portion of his principal each year for living expenses, because impairment of the principal means a corresponding reduction in income. The danger confronting this man is just the opposite of that facing the man who wants insurance against death. The latter wants insurance because he does not know how long he may live, while the former wants assurance that he will not outlive his income.

The difficulty referred to can be remedied by investing the savings fund of \$15,000 in a life annuity. By doing this a definite and much larger income, guaranteed for the whole of life, can be obtained. To quote the rates of a certain company, the investment of the \$15,000 in an annuity at age 65 will yield an annual income throughout life of \$1,538.10, instead of \$750 per annum, or 10 $\frac{1}{4}$ per cent as compared with the current rate of 5 per cent. As the age of the annuitant when purchasing the annuity increases, the

greater will be the return, amounting in this company to nearly $12\frac{1}{2}$ per cent at age 70 and to nearly $15\frac{1}{2}$ per cent at age 75. These large returns are possible (1) because the death rate following ages 65, 70, and 75 is very high, and (2) because in accordance with the meaning of an annuity all payments will cease upon death and the unused portion of the purchase price of the annuity will redound to the benefit of those annuitants still living. The apparently large return is again made up of two portions, viz., (1) a part of the principal, and (2) interest earnings on any net balance held by the company.

The advantageous use of annuities by many classes of people must be apparent. Even where a decent savings fund has been accumulated, it is usually of such modest size that the enjoyment of the fruits of a life's toil for the period of retirement from active life is spoiled by the economy that must be exercised to make ends meet, by the

limited character of the comforts that can be obtained with the fund available in view of the high cost of living, if the principal is not to be touched, and by the prospect of losing the source of the income itself through unfortunate investment. The prospect, amounting almost to a terror, of living too long, makes necessary the keeping of the entire principal intact to the very end, so that as a final wind-up, the savings of a lifetime, which the owner does not dare to enjoy, will pass as an inheritance to others. In view of these facts it is surprising that so few have undertaken to enjoy *without fear* the fruits of the limited competency they have succeeded in accumulating. This can only be done through annuities. Why exist on \$750 a year (assuming 5 per cent on \$15,000) and then *live in fear* when \$1,500 may be obtained at age 65 through an annuity *for all of life and minus all the fear?*

Promotion and Practice of Thrift in Foreign Countries

BY S. W. STRAUS

President of American Society for Thrift

EUROPEAN thrift really began with Daniel Defoe. His essays marked the first crystallization of public thrift impulses. His plans for a *Mutual Marine Insurance Society* and his *Essays on Projects* constituted the first definite step toward organized public thrift. The genius of Defoe bestowed its rich gifts upon the world during the latter part of the seventeenth century, but so far ahead of his time was he that it was not until another hundred years that any definite thrift institutions began to take form. With the establishment of Europe's first savings bank in Brunswick, Germany, in 1765, there began a steady application of the principles of thrift, which grew with constant substantiability as the processes of education developed.

The havoc of war has greatly changed conditions among the masses of the people in Europe. There is a temporary absence of the former poise and steadfastness of the people. A wave of discontentment, together with a wave of thriftlessness, is sweeping England and the Continent. One hears stories of the growth of popular discord and of unprecedented wastefulness and debauchery in the capitals. The upheaval of war has left many strange impressions on the hearts of men, and it will only be through the return of the European masses to their former standards of thrift that the great political problems now confronting the nations across the sea will be solved. Belgium, long one of the most thrifty nations in the world, is begin-

ning to settle down to her former basis. Her people have gone back to work. Production is being rapidly increased and the old time thrift is being reinstituted.

While one must witness with deep concern the throes of social and economic agony with which Europe now is suffering, it must be borne in mind that common sense, justice and right will prevail in the end, that the process of stabilization will be carried through to successful conclusion and that the thrift of the old days will again become generally practiced.

It was only through thrift that the peoples of many of the countries of Europe were able to live and make progress before the war. With tremendous populations crowded and herded together on small areas of land, life itself would have been impossible had it not been for the frugal cultivation of every square foot of soil and the conservation of every atom of resource.

BEGINNING OF THRIFT IN EUROPE

In tracing the history of thrift in Europe, it has been found that, after the establishment of the first savings bank, a period of thirteen years elapsed before the second one was opened. This was in Hamburg, Germany, in 1778. In Aldenburg, Germany, the third savings bank was opened in 1786.

France manifested her first acceptance of thrift in 1790 when a savings bank was founded at Loire. Two years later the idea reached Switzerland in the establishment of a bank in Basil;

in another two years one was opened in Geneva.

English thrift had its first definite manifestation in 1797 when Jeremy Bentham began the establishment of a system of crude institutions called "Frugality Banks." A Christmas fund was established in the parish of Wendover, Buckinghamshire, through which the working classes were encouraged to save money during the summer to be returned at Christmas time with an additional bounty. What appears to have been the first English Thrift Society was established at Tottenham, Highcross, in 1798 by Miss Priscilla Wakefield, called a "Friendly Society for Women and Children." This was an annuity movement with provision for sick benefits and burial funds. Three years later it was developed into a savings bank which appears to have been the first institution of the kind in Great Britain. The movement spread rapidly and met with special favor in Scotland where in 1810 the Rev. Henry Duncan began a parish bank at Ruthwell in Dumfriesshire, containing many features of the modern savings bank. The institution proved profitable, and in 1814 the Rev. Mr. Duncan's plans were followed in Edinburgh by the organization of the "Society for the Suppression of Mendicity," out of which grew the Edinburgh Savings Bank.

FORMS OF THRIFT

Great Britain

Savings Bank. By 1817 the thrift movement in England had attained such proportions that the British Parliament began the control and regulation of savings banks. With this splendid encouragement banks sprang up in all important centers of population in England, Scotland, Wales and

Ireland, so that by the close of the year 1818 there were in existence more than two hundred savings banks.

As the thrift movement grew in England, certain false conceptions of thrift took root. Many of the so-called thrift societies were out-and-out charity organizations. The people gained confused ideas. Misconceptions were fostered. Thrift work, if not conducted along the lines of actual charity, was, in many instances, encouraged in its most narrow sense. The broad, constructive principles of personal efficiency were ignored and the poor were taught to hoard their small earnings without thought of the underlying principle that thrift means the process of thriving, of upbuilding, of growing.

One must save his money not merely for the sake of saving, like the miser, but for the purpose of utilizing his earnings in ways that do him the most good. He must be thrifty with his time, his energies, and his health as well as with his money. He must study himself as well as the rights and needs of those about him. The thrifty man must be a dynamic force in his community, not a dead weight on society. In much of the thrift work done in England before the war, these basic principles were not understood. The conditions, which were the logical outcome of these errors, were briefly described by Mr. Hartley Withers, editor of the *London Economist*, who said:

When the public was called upon to assist in financing the war by saving, the entire country was honeycombed with delusions concerning money and the spending thereof which made it seem an almost impossible task to persuade it within any reasonable time, that saving money was a patriotic duty in time of war or at any other time. The well-to-do class, the education of which concerning money matters was mostly a minus quantity, were convinced that, since spending money gave employment it was at all times the right

and proper thing to spend money as fast as possible and "help poor people" who wanted work. It had not dawned upon them that there is any difference between spending money on a display of fireworks and on building a factory to give employment to those who built it, and to continue to give employment to all who work in it, and, moreover, to increase the supply of goods that a man wants for his living and comfort. Among the poor classes this belief also flourished in a vague, unconscious way and in their case the prejudice against saving was greatly strengthened by the very narrow margin that the general level of wages gave them for subsistence. Their power to save was so small that those who spent all they got would almost inevitably be obliged at one time or another to live on someone else, and the deeper economic fact which lies behind saving in normal times—that without saving there can be no new capital, and that without new capital there can be no expansion of the equipment of industry—had not even dawned except upon a small minority of thinking Englishmen.

England learned well her lesson of patriotic thrift during the war. Every man, woman and child bought savings securities to the average of nearly £3,000 per capita. More than 40,000 war savings associations flourished and it is estimated that, as a result of these efforts, £1,250,000,000 came from the pockets of the very poor, a considerable percentage of whom had not saved before. This was true because the war furnished an exalted motive and the English people arose to their great opportunity with true sublimity.

A rather definite idea of the general standards of thrift in England prior to the war may be gained from the following official statistics: During the period from 1907 to 1911, of all men who died in Great Britain, over 75 years of age, 79.23 per cent left estates of less than £100, 90.12 per cent left estates under £500 and 93.45 per cent left estates of less than £1,000. During this period the 79.23 per cent of the total number of estates represented

only 4.57 per cent of the value of all estates; the 90.12 per cent comprised but 8.19 per cent of the total value of estates; while the 93.45 per cent of the total number of estates constituted only 11.36 per cent of the total value. It may be said, however, that, regardless of this rather poor showing, almost every English family was protected in either one way or another through membership in a provident, friendly or insurance association.

The English Post Office Savings Bank was the pioneer in this phase of thrift work, and, therefore, the Postal Savings Bank systems in all European countries are patterned after the British plan. The system, since its establishment in 1861, has accomplished much good. It is interesting to note that the original bill "for establishing a fund and assurance office for investing savings of the poor" was introduced in the British Parliament as early as 1807, but only after agitation lasting more than half a century did the government take up this work.

In the United Kingdom there are some 12,000 offices of the Postal Bank, where deposits or withdrawals may be made. A short time before the war one person out of every seven in England had money deposited in the Post Office Savings Bank. Deposits as low as a shilling and as high as £150 are accepted from the depositor annually, and each depositor may have placed to his credit the maximum of £200, including interest. When his account exceeds this amount the balance is invested in government securities, unless the depositor designates some other use for it. The interest paid depositors is $2\frac{1}{2}$ per cent.

For the benefit of small savers, penny stamps are issued, which can be redeemed when a shilling's worth have

been saved. Children over seven years of age may deposit and withdraw in their own names, but when under seven the guardian must transact the business. Accounts may be opened both by individuals and by societies. Withdrawals may be made by the depositor in person or upon due order. In cases of emergency the depositor may withdraw funds by telegram.

The English Postal Savings Bank system attends to the collection of dividends for its depositors whose accumulations have been invested in government stock, and it also makes sales of these securities, for which service a small commission is charged. Notwithstanding the popularity of the British Post Office Banks, and the vast amount of money deposited, and the low interest rate paid depositors, the system has not been self-sustaining. Italy, on the contrary, makes a profit from her Post Office Savings Bank system, after paying 5 per cent interest on her consols.

Belgium

Generally speaking, Belgium, in her pre-war days, was a nation in which pauperism was unknown. Everybody practiced thrift. The government had popular devices not unlike our war savings stamps, and, in fact, there was provision even for saving the pennies and investing them with the government. The Post Offices, the Government Savings Bank, and the branches of the Government National Bank all received deposits as low as one franc. When deposits were made in small amounts the depositor received an adhesive stamp similar to an American war savings stamp. These were pasted in a book, which was given an official number and delivered without expense to the owner. This book contained the

record of all transactions with the depositor, including the addition of the interest, which was computed annually. In order to encourage school children and the very poor, postage stamps could be purchased and used as savings stamps. All letter carriers were provided with an equipment of stationery and stamps to supply those who wished to make these little investments.

Another form of practical thrift fostered by the Belgium government was the life annuity, which could be contracted for any place where government savings were accepted, and at the offices of the tax collectors as well. By this system payments, varying from one to 1,200 francs, could be made. Special attention was given to teaching thrift to the children of Belgium, for it was recognized that only in this way would the nation remain thrifty.

France

The School Savings Bank, which originated in France, has developed more successfully there than in any other country in the world, and no doubt the success of the system has been one of the underlying causes of the splendid thrift of the French people. It has been said that "France was saved by thrift." After disastrous defeat at the hands of Germany in 1870 she lost Alsace and Lorraine, and was compelled to pay an indemnity of one billion dollars. The value of thrift then was splendidly demonstrated. The people came to the assistance of the government with their savings in those dark days, and made it possible for the heavy indemnity to be liquidated in a very short time. The French have been known as a nation of bond buyers, and the issues of government bonds of very small denominations

have afforded a medium of investment which has appealed alike to the Frenchman's frugality and patriotism.

Savings Banks. Although France had an exceedingly low wage scale prior to the war, there were 362 savings bank depositors out of every 1,000 population. A very good idea of economic conditions among the people of France before the war may be gained from the following statistics: "The *Annuaire Statistique*" for 1910, which comprises the government reports of all the estates probated in France during the year 1909, shows that of all persons who died that year, both men and women, 29.83 per cent left estates of less than 500 francs; 25.72 per cent of the total number left estates between 500 and 2,000 francs; 28.07 per cent left estates between 2,000 and 10,000 francs; 12.39 per cent left estates between 10,000 and 50,000 francs; and 2 per cent left estates between 50,000 and 100,000 francs.

Government Bonds. The thrift activities of the French were exerted largely through the medium of the small government bonds, issued in denominations as low as two and three francs. Nine-tenths of France's 10,000,000 electors were investors either in government debt certificates or some form of security, and there were 12,500,000 savings bank depositors in the Republic, over 50 per cent of whom had each less than \$4 to his credit.

An instance of French thrift is shown in the way the French secure kindling wood. They gather up the smallest twigs, load them in their little carts and carry them into Paris where they are sold. French housewives probably excel the women of all other nations in their skill in utilizing the full amount of food from their pur-

chases. Absolutely nothing is wasted in the French kitchen. There is a recipe for every possible left-over article.

Italy

The Peoples' Banks of Italy have for many years done much to develop habits of saving among Italians. Signor Luigi Luzzatti was responsible for the Peoples' Bank movement, which originated in Milan in 1866. The small bank was organized with a capital of only \$140, the primary purpose of the institution being to combat the injustice of usurers. Shares in the bank were issued and sold in denominations of \$5 to \$10 each, with a small entrance fee. From this small beginning the system grew until it now is a great factor in the life of the Italian people. Loans are made only on short-time maturities, usually for a period of three months, although a rather liberal policy of renewals is maintained.

"Loans of Honor" are made by some of the banks to persons who are able to furnish no security, and it is a matter of gratification to know that these loans have been made with good judgment, and that the borrowers have been actuated by motives of very high integrity.

Signor Leone Wollenborg was the founder of a similar movement among the country people of Italy. He seems to have had an understanding of the educational value of thrift, which has resulted in considerable moral as well as financial benefits. No one could become a member of Doctor Wollenborg's banks unless he were able to read and write, and as a result, great good has been done in eliminating illiteracy.

Membership in these banks is also denied to drunkards or persons guilty of any form of dissipation. The result

has been that they have exerted an uplifting influence in the rural communities where they have been established. There were, according to the best available pre-war statistics, more than 400 rural banks of independent formation in Italy, in addition to approximately 100 of the Wollenborg type.

The Peoples' Banks of Italy have detracted somewhat from the number of depositors in the Post Office Savings Banks, as the people naturally preferred to use institutions in which they were shareholders. These Peoples' Banks, in addition to encouraging frugality among the masses of the people in Italy, have enabled the farmers to develop their land to the highest state of productivity, furnishing the ready money with which to purchase stock, fertilizer, and machinery, erect buildings, construct fences, and make such other improvements as are needed.

THE COÖPERATIVE PLAN

In many parts of Europe one encounters some form of the coöperative movement. The economic value of coöperative marketing methods is the elimination of the so-called middle men. The products go directly from producer to consumer, and all unnecessary labor cost is eliminated. The producer gets the maximum price for his products, and the consumer gets his food commodities at the minimum price.

In Belgium, Switzerland, Holland and Denmark, one found before the war much development of the coöperative plan, particularly in the marketing of Holland's dairy products in London. Farmers of Holland offer splendid examples of thrift, not alone in the utilization of every square inch of available land, but also in the care

and attention given to live stock. In the summer time the finer cows are blanketed to keep off the flies, and in the spring time the cattle are covered to protect them from cold rains. In the Netherlands, the grim fight to preserve their land from the constantly threatening encroachment of the sea has bestowed on the Hollanders a sturdiness of character and has made them a most admirable people. Everywhere in that wonderful country of flowers, canals and windmills, one finds manifestations of intelligent, constructive thrift. Thrift has, indeed, made Holland, as it has made Switzerland, Denmark, Belgium and France.

SAVINGS IN THE UNITED STATES AND EUROPE

By way of comparing general conditions in Europe prior to the war with those in the United States, as based on the number of savings bank depositors per 1,000 population, the United States ranked thirteenth among the great nations of the world. The relative standing of these countries in this respect was as follows: Switzerland, Denmark, Norway, Sweden, Belgium, France, Holland, Germany, England, Australia, Japan, Italy, United States. In Switzerland nearly six out of every ten persons were savings bank depositors, but in the United States the ratio was just a little better than one to ten. Statistics in Switzerland show that there was an average of five savings depositors for every two families, and in all of the European countries there was one savings depositor to each family.

The showing of various European countries in the matter of fire prevention also is of much interest. The figures for 1913, the last pre-war year, show the per capita losses from fires in

the United States as compared with the losses in Europe as follows:

United States.....	\$2.10
England.....	.53
France.....	.49
Germany.....	.28
Austria.....	.25
Italy.....	.25
Switzerland.....	.25
Holland.....	.11

The practice of thrift in foreign countries can be made to serve a most worthy purpose for America. First of all, we can learn the lesson of the value of little things. Thrift as exemplified in Europe, consisted primarily in the elimination of waste. The smallest amount of money was not too insignificant to be saved nor was the most obscure bit of land unworthy of cultivation. Could America develop her natural resources as thoroughly and exhaustively as was the case with most of the countries of Europe before the war, our national wealth would be far beyond what it is today. This is one of the big lessons that America must learn. We must understand that the pennies are to be saved as well as the dollars, that the little scraps of food, little bits of land and the smallest amounts of our various resources and commodities must be guarded just as assiduously as our mightiest storehouses of wealth.

Europe also can teach us that there

is a close inter-relationship between education and thrift. A general survey of pre-war thrift conditions on the Continent gave impressive demonstrations of this fact. In Russia and the Balkans one found illiteracy. In England, Scandinavia, France, Belgium and Switzerland, one found a satisfactory average of literacy with a corresponding prevalence of thrift. America must learn eventually that the development of thrift will not only be the means of solving economic and social problems, but that it also constitutes a subject of technical pedagogic interest.

If we are to develop thrift in America along lasting lines, we must begin at the foundation. We must make use of that most important laboratory, the schoolroom. We must learn to teach thrift in the classroom, not as a separate subject, but in its relationship to such branches as arithmetic, history, chemistry, biology, geography, grammar, household economics and business practice. An analysis of European thrift will reveal that among nations where the most effort was concentrated in teaching thrift to the children, the more sturdy and steadfast were the people of that nation in their thrift practices.

America must learn these great fundamental truths from the peoples across the sea.

National Saving in the United Kingdom

By WILLIAM SCHOOLING, C.B.E.

Member of the British National War Savings Committee

A REMARKABLE development of national saving has taken place as a direct result of the war. Not only are the statistics striking, but the character of the whole movement, and the basis of the appeal to save, are also remarkable. It is an example of an organisation, established to effect a somewhat limited purpose, achieving unexpected results of far greater importance.

At the outbreak of war it was anticipated that there might be a great deal of unemployment, but as a matter of fact unemployment disappeared altogether, and weekly wage-earners as a whole were better off than ever before.

EFFECT OF WAR ON PERSONAL EXPENDITURE

In the early stages of the war the government attracted workers to munition making and other occupations connected with the conduct of the war, by offering wages in excess of the market rate; this and the national need brought into employment a large number of people, especially women, who were previously not engaged in industry, and the family incomes became very large in proportion to what they had been previously. There were a smaller number of people who were making large profits out of war contracts, many of whom thought it appropriate to spend their money with ostentatious extravagance. The professional and upper classes—speaking generally—greatly reduced their expenditure, partly of necessity but

largely from patriotic motives. The best shops in the west end of London and elsewhere experienced a great change in the character of their customers and gradually began to cater for the extravagant and vulgar tastes of the *nouveaux riches*.

The wage-earners, with better excuse, were also extravagant and bought cheap jewelry, furs, pianos and other things in a way that was rather pathetic. They also bought necessary clothes, useful furniture, and in particular fed and clothed their children better than before. In thousands of cases people had a surplus over the cost of necessities for the first time in their lives and none but the unsympathetic were prepared to blame them for injudicious extravagance.

EFFECTS OF GOVERNMENT EXPENDITURES ON BUSINESS

The expenditure of the British government on the war was, of course, enormous. It raised by taxation about half the proportion of war costs derived from taxation during the Napoleonic Wars; it raised money, partly by loans and partly by inflation, through printing a large amount of paper money, and also by the artificial creation of credit through the banks. The natural result was to depreciate the purchasing power of money, or in other words to increase the cost of living. This led to demands for increased wages; added to the cost of war supplies; increased the amount of money required by the government; produced further inflation, and so on continuously, each

adverse condition being consequence and cause of further injury. A vicious vortex was set up which still exists and from which escape is only possible by means of increased production and of economy by the government and by individuals.

GOVERNMENT SECURITIES FOR THE WAGE-EARNER

In these circumstances the Treasury thought it would be advisable to obtain subscriptions to government securities from the wage-earners, whose incomes in terms of money, and whose "effective" incomes, especially from the family point of view, were so much larger than before. Consequently a "Parliamentary War Savings Committee" was appointed. This effort was a failure.

In 1915 a committee was appointed to consider War Loans in relation to the small investor. The Chairman was Mr. Montague, the present Secretary of State for India. This committee recommended the establishment of a body, which became known as the National War Savings Committee, and the introduction of a security called the War Savings Certificate. Both these recommendations were adopted and an unexpectedly great amount of good has resulted.

THE WAR SAVINGS CERTIFICATE

The War Savings Certificate is a registered security which costs 15s. 6d. It was originally issued for five years, at the end of which time it could be cashed for £1. The period was subsequently extended to ten years, at end of which time the certificate becomes worth 26s.

The Montague Committee pointed out that some of the conditions necessary for a security that would appeal

effectively to the small investor were:

- (1) The ability to withdraw the money invested at any time and without loss.
- (2) Facilities for safe custody for people with no accommodation for keeping valuables.
- (3) A rate of interest as high as is given to the large investor.

The War Savings Certificate fulfils all these conditions. It can be cashed through any post office on three days' notice. The amount obtainable within twelve months of the date of issue is the cost price of 15s. 6d. After twelve months the amount is 15s. 9d. Thereafter the months cash value increases by one penny a month until at the end of four years and eleven months the cash value is 19s. 8d. At the end of five years it is £1. It again increases by one penny a month, until at the end of nine years and eleven months from the date of issue it is worth 24s. 11d., and at the end of ten years 26s.

On purchasing a certificate, the investor has to sign his name; this need only be done once, since, when buying subsequent certificates, the reference number of an earlier certificate owned can be given. When application is made to cash the certificate, the signature of the owner is again required. The transfer of certificates from one individual to another is not normally permitted; as the certificates are readily cashable, there is no occasion to transfer them.

No interest being earned during the first year, the rate of interest paid grows gradually during the first five years, and the rate for the five year period is just under 5½ per cent per annum, compound. For the succeeding four years and eleven months the rate gradually falls slightly, but be-

comes 5.3 per cent compound for the ten year period.

No income tax is charged in connection with the interest on these certificates. In order to avoid loss of tax it is necessary to limit the number of certificates any individual may purchase. This limit is fixed at 500, which cost £387 10s., and become worth £500 at the end of five years and £650 at the end of ten years. Each member of a family may hold 500 certificates, and an individual may hold more than 500, if acquired by inheritance, but after the holding exceeds the limit, no further certificates may be purchased. The loss of income tax is not so great as might be supposed, since the majority of the holders of certificates have incomes which are too small to make them liable to income tax.

The cost of handling securities of so small an amount as 15s. 6d. is considerable, but the advantages of a widespread holding of government securities and the individual and national benefits from the encouragement of

thrift are so great that this expense is amply justified.

EXTENT OF SAVINGS OF SMALL INVESTORS

As a result of the issue of Savings Certificates and other government securities in small denominations, the number of holders of British government securities has increased from 345,000 before the war to over 17,000,000 at the present time.

War Savings Certificates were first issued in February, 1916. In addition, various War Loans and War Bonds for amounts of £5 and upwards were issued through the Post Office. Loans and bonds for large amounts were issued through the Bank of England. The contributions to war finance by the small investor are fairly represented by subscriptions to Post Office Issues. Another channel for the savings of the small investor is the Post Office and the Trustee Savings Banks. The following table summarises the subscriptions to these securities:

TABLE I. SAVINGS OF SMALL INVESTORS

Date	Increase or Decrease in Savings Banks Deposits	Government Securities Post Office Issues		Totals
		Various	War Savings Certificates	
	£	£	£	£
Aug. 1914—Jan. 1915.....	+ 3,316,000	....	....	3,316,000
Feb. 1915—July 1915.....	+ 13,517,000	34,693,000	....	21,176,000
Aug. 1915—Jan. 1916.....	+ 4,864,000	11,339,000	....	16,203,000
Feb. 1916—July 1916.....	+ 4,651,000	21,838,000	15,555,000	42,044,000
Aug. 1916—Jan. 1917.....	+ 5,665,000	21,772,000	32,881,000	60,318,000
Feb. 1917—July 1917.....	— 8,250,000	33,318,000	40,602,000	65,670,000
Aug. 1917—Jan. 1918.....	+ 17,256,000	17,949,000	30,346,000	65,551,000
Feb. 1918—July 1918.....	+ 15,094,000	19,000,000	56,454,000	90,548,000
Aug. 1918—Jan. 1919.....	+ 27,416,000	23,800,000	53,043,000	104,259,000
Totals.....	+ 56,495,000	183,709,000	228,881,000	469,085,000

The figures for the Savings Banks show the variations in the amount of the deposits and not the total deposits. The reductions in the deposits are due to money being withdrawn from the Savings Banks for investment in War Loans or Bonds.

Single documents can be obtained representing one certificate, twelve certificates, twenty-five certificates, or any number from twenty-six to 500. It is a significant fact that, since the signing of the Armistice, the sale of certificates has been well maintained; this is especially noticeable in connection with the smaller denominations of one certificate and twelve certificates.

Although, as we shall see presently, these certificates were largely purchased from patriotic motives in order to help the country during the war, the number that have been cashed in proportion to the total issued is extremely small, when compared with the normal withdrawals from Savings Banks, or the surrender or lapse of industrial life policies. Some statistics of certificates cashed are appended:

TABLE II. WAR SAVINGS CERTIFICATES CASHED

Date	Amount	Per Cent of Total in Force
	£	%
6 months ending July 1916 . . .	31,000	0.20
“ “ Jan. 1917 . . .	529,000	1.09
“ “ July 1917 . . .	1,268,000	1.43
“ “ Jan. 1918 . . .	1,864,000	1.58
“ “ July 1918 . . .	2,700,000	1.57
“ “ Jan. 1919 . . .	4,356,000	1.96
Total	10,748,000	4.93

SAVINGS BANKS IN THE UNITED KINGDOM

There are two classes of Savings Banks in the United Kingdom: one is the Post Office, and the other the Trustee Savings Banks. The rate of interest paid by these banks is only $2\frac{1}{2}$ per cent, and it was not unnaturally thought that the higher rate of interest yielded by certificates would lead to substantial withdrawals of deposits from the Post Office and Trustee Savings Banks. These expectations, however, were not realised, and since the Savings Campaign conducted by the War Savings Movement has been in progress, the increase in the Savings Banks deposits has been much larger than in normal times.

The National War Savings Committee was most anxious to avoid any step that would be detrimental to the permanent thrift institutions of the United Kingdom, since it was not generally contemplated that the War Savings Movement would continue for long after the termination of the war. Its success has, however, been so marked that the movement will continue, and it is intended that securities of the character of Savings Certificates shall be a permanent feature of British government finance. The terms may of course vary, and the adjustment is likely to be made by an alteration in the price, leaving the conditions unchanged.

It would be interesting to give some record of other thrift institutions in the United Kingdom, such as Industrial Life offices, and Friendly, Building, and Coöperative societies; but it may be more useful to devote the space available to some account of the National Savings Movement.

THE NATIONAL SAVINGS MOVEMENT

The National Committee was appointed by the government early in 1916 for the purpose of organising England and Wales. A separate committee was subsequently appointed for Scotland and, more recently, the movement has extended to Ireland. The account here given refers mainly to the work of the National Committee in England and Wales.

The first step was to set up local committees throughout the country. The initiative in doing this was generally taken by the Lords-Lieutenants of the Counties, Lord Mayors and Mayors of Cities and Boroughs, and the Chairmen of District Councils. Help of the most valuable character was rendered by the Education Authorities.

The response to the appeal was at first extremely disappointing, but gradually the needs of the country and the sound economic basis of the movement won recognition and at the present time there are about 1,800 local War Savings Committees. The function of these committees is to set up Savings Associations which collect subscriptions to War Savings Certificates; to carry on educational work which, as will be seen, is a most important feature; to supervise the working of the associations, and, generally, to act as the National Committee for the locality.

The out-of-pocket expenses are paid out of a Parliamentary grant administered by the National Committee, but the whole of the work throughout the country is done by unpaid volunteers, of whom there are some 200,000. The number of Savings Associations is about 35,000.

WHAT THE SAVINGS MOVEMENT ACCOMPLISHED

It was said at the beginning of this article that the movement was accomplishing much more than was originally contemplated. The truth of this becomes apparent when we consider the objects which various members of this great army thought they were working for.

The original idea was to obtain money for the Treasury from the small investor for the conduct of the war. In the minds of many workers this was the sole object. This conception was fostered by special campaigns such as Business Men's Week, Guns Week, and in connection with War Loans, the subscription lists of which were open for only a short time. Friendly rivalry between towns was a feature of these campaigns, and the amounts subscribed in each area were widely published. The appeal to support the fighting forces with money was readily responded to from patriotic motives, and the high rate of interest yielded had no weight with the vast majority of the subscribers.

It did not require much thought, however, to show two things. The first that so long as the country supported the war, the government could pay for it in some way or other, and secondly that the Savings Movement was accomplishing something of greater importance than supplying money for the Treasury. For the most part money could only be found by the small investor by reducing his personal demands for goods and services; the supply of these was limited and, by releasing them for war purposes, the fighting efficiency of the nation was increased. Further, genuine savings

effected a transfer of purchasing power to the government and served to diminish that artificial creation of purchasing power by the manufacture of credit which, as we have seen, was drawing the nation into a vicious vortex. Hence the Saving Movement was found to be increasing the efficiency for war, and, by encouraging sound instead of unsound finance, was promoting the future industrial prosperity of the country and its easier recovery from the strain of war.

Looking a little more closely into the facts it was seen that the material cost of the war was an example of the cost of waste in general. So far as concerns the reduction in the national wealth, the sinking of the *Lusitania* by a German submarine, and of the *Titanic* by collision with an iceberg, are of the same character. Whether motors are worn out in joy rides, or on the battlefield, the consequent decrease in the aggregate wealth of the nation as a whole is identical. Hence, if the nation was not to suffer unnecessarily, the waste of war must be substituted for, and not added to, the normal waste of peace time.

Manifestly the welfare of the individual was being promoted by the adoption of the course that best furthered national well-being. If lower prices were to be expected in the future than during the war, deferred expenditure would be more beneficial than immediate outlay; by accumulation at interest the amount of money available would be increased; there is the further probability that large amounts would be more wisely spent than small sums, thus yielding permanent satisfaction in place of temporary gratification. Looking further ahead, money could be provided for the education of children; the purchase of a house or a

business; or the starting of a boy in some profession or trade.

The success of the movement was very largely due to the personal intercourse between the voluntary workers and the individual savers; they were making a joint effort in a common cause in face of a great national peril; it was seen that the restrictions and self-discipline were building character and forming wiser habits. Among the earliest and most successful features was the enthusiastic reception met with from the schools, in which in England and Wales there are some 12,000 Savings Associations. It was not only that habits were being formed which the children will maintain in after life, but the boys and girls became enthusiastic missionaries to their parents.

Thus, little by little the larger and enduring aspects of the movement came to be recognised. It is because of this that the movement is continuing with but little decrease of efforts, or results, now that the war has been over for a year.

It was to be anticipated that some associations would cease to exist, but large numbers of new associations are still being formed. During the war many associations had the voluntary services of workers who collected subscriptions from house to house, and there were numerous associations in munition works which have come to an end; in such cases the associations could scarcely continue.

Where, however, groups of people exist for some other purpose, such as children in schools and work people in common employment, the associations are continuing and their number is being added to.

Special schemes have been devised, by means of stamps and otherwise,

for receiving subscriptions of small amounts, such as six pences, and the account-keeping involved is not of an onerous character.

A fundamental conception of the movement may be approached in another way. Man owes his predominance over other animals largely to the fact that he is a tool-making and tool-using animal; his progress in this direction is indicated by the change from the axes and arrow-heads of the Stone Age to the power-driven automatic machines of today. It is estimated that the introduction of steam power was equivalent to the addition of 1,000,000,000 human workers. Thus there has been created a vast army of "mechanical slaves" for doing a large part of the work which mankind requires. This development has materially contributed towards the substitution, to a continually increasing extent, of life for existence. Bare necessities are more easily obtained and there is a growing margin or surplus, making possible a higher type of life.

SOME EFFECTS OF THE WAR ON SAVING

One good result of the war has been a general recognition that the standard of living must be higher than before; thus we have shorter hours of labour, and an increase, not merely in money wages but, in effective wages. These conditions are possible if—but only if—we have increased efficiency and a larger output. Further, the increase of leisure will be fully beneficial when—and only when—people have learnt to use their leisure in ways that give lasting satisfaction and develop their higher faculties.

If we look back to any epoch that has marked a social advance, we find it to be characterised by a fuller appreciation of non-material joys. There is a

desire for life, and life more abundantly, such as was expressed by the young Erasmus when he wrote from Paris "I have given up my whole soul to Greek learning. When I have some money I shall buy some Greek books, and then perhaps I shall buy some clothes." There is today in the United Kingdom a widespread, partly inarticulate, hunger for a wider life—for some familiarity with the best that has been thought and said in the world—and a desire to promote by social effort a better and a happier England. These desires are at least as marked among the wage-earners as in any other class of the community.

Recognising the advantages, that have come gradually through the ages, for a margin over bare necessities, and appreciating the attractions of the products of invention and discovery, the National Savings Movement is not advocating saving for saving's sake, but for far greater reasons. Saving is urged as the practical method of providing the means for *wise spending* in the future. We are familiar with the housewife who can make one dollar yield more benefit than others can derive from two dollars; it is manifest that a better standard of living will come as much from wise spending as from high earning, and it is as a means to procuring the greatest and most lasting satisfaction, that saving is advocated.

The normal waste of peace time, yielding little or no permanent satisfaction, diminishes the surplus available for real life and, through the action of familiar economic laws, imposes the greatest burden upon the poorest classes of the community by increasing the cost of the necessities of life.

Especially while we are making good

the waste of war, restricted expenditure and abstention from extravagance and waste are imperative, and the accumulation of capital for the development of industry, and the maintenance of full employment at high wages are a purpose of the utmost national importance.

In the long run, however, the desirable thing is not less spending but more spending, always provided that it is that wise expenditure which makes for the enjoyment of a higher type of life.

Throughout the long period of the life of man upon the earth there has been a rising tide of progress, accompanied by waves of retrogression; for the moment the war appears as a retreating wave, but it may be made to serve as a force in aid of the advancing tide. Britain, like America, went into the war for the cause of Freedom, Honour, and Civilisation. The defeat of Germany was but a means to a greater end, and while there remains in our midst any preventable ignorance, poverty, or disease, the cause for which so much was sacrificed will not have been won.

That cause is as much worth fighting for now as it was while the war was waging. Recognising the splendid purpose the National Savings Movement can serve, its large army of volunteers is working in the finest spirit and with the greatest enthusiasm for a social institution that will be a beneficial and enduring feature of British life.

Before the war there was published *An Open Letter to English Gentlemen*; it was addressed primarily to Public School and University men. They were reminded that England had done much for them, and it was suggested that they would welcome the opportunity of rendering some social service to their country. The appeal was made "You would fight, will you not also serve?" When the need for fighting came we saw the response that was made.

Today there is a double appeal; to some it is "You have fought, will you not also serve?" To the rest of us "You could not fight, will you not therefore serve?" And the fighting and the service are for the same cause.

Thrift in the United States

By GEORGE F. ZOOK, PH.D.

Professor of Modern European History, the Pennsylvania State College; recently of the Savings Division of the United States Treasury Department.

THRIFT AMONG AMERICAN COLONISTS

THE thrift of a large portion of the American colonists is proverbial. Compelled as they were to earn their livelihood under extremely adverse conditions they showed how they appreciated the value of the products of their labor by saving them for future emergencies. They also improved their spare time in the making of tools, clothing and shoes. As opportunity offered they built better homes, barns and warehouses. Thus they assured themselves that their necessary wants in the future could be supplied with increasing ease. They earned well and they saved well. Much of what they produced and saved was permanent in character and has been passed on to future generations to use and enjoy.

In later colonial times thrift remained deeply ingrained in the character of the American people, especially those who lived in the northern and central colonies. From 1732 to 1737 Benjamin Franklin, writing under the pseudonym of "Poor Richard," found a very sympathetic audience for his *Almanac* in which, through verse and precept, he so succinctly described the virtue of thrift and the vice of waste and extravagance.

BEGINNING OF SAVINGS INSTITUTIONS

The thrift of time and materials which was emphasized by the American colonists naturally included money thrift, but there was no established institution in America where people could place their small savings to ad-

vantage until 1816. On November 29 of that year Thomas Eddy organized "The Bank for Savings in the City of New York." This bank opened its doors for business March 26, 1819, with 80 depositors and \$2,807 in deposits. Within eight months these numbers increased to 1,481 depositors with \$148,372.27 in deposits.

Three days after the organization of the New York Savings Bank, that is on December 2, 1816, the "Philadelphia Saving Fund Society" was formed and immediately began to receive deposits. The Philadelphia institution was thus the first savings bank in the United States to begin operation. Shortly thereafter similar institutions were founded in Boston and Baltimore. In 1820 there were 10 savings banks in the United States with 8,635 depositors. These numbers grew to 61 savings banks and 78,781 depositors in 1840; to 278 savings banks and 693,970 depositors in 1860; and to more than 2,000 savings banks and about 11,000,000 depositors in 1914.

At the same time building and loan associations, first organized in 1831, also developed in a remarkable way. The number had so increased by 1886 that a national organization of building and loan associations was formed at Minneapolis. On December 31, 1918, reports showed 7,269 such associations to be in existence with 3,838,612 members and assets of about \$1,750,000,000.

FACTORS AGAINST THRIFT IN AMERICA

Notwithstanding the opportunities for saving money offered by these or-

ganizations and the remarkable growth which they have had, the American people developed throughout the nineteenth century the unthrifty habits for which they have been known the world over. The reasons for this condition are numerous. America has been blessed with abundant and bountiful natural resources which have been easily obtained and sufficiently well distributed to allow the great majority of American people to live comfortably without undergoing the hardships suffered by those who live in old and impoverished countries.

Moreover, the ease with which certain fortunate individuals have sometimes secured sudden wealth from our natural resources has caused a widespread spirit of speculation. Far too many people, unwilling to accept the usual interest rates paid by recognized and legitimate investments, have preferred to risk the entire principal in speculation with the hope of "striking it rich." This unfortunate tendency toward speculation has continued throughout all of our later history, although dealers in fake stocks and bonds have annually taken advantage of the situation to fleece such people out of millions of hard-earned dollars.

People who have had this unfortunate experience naturally do not forget it easily. In numerous instances they go to the other extreme and become wary of all investments except perhaps those in real estate in their immediate vicinity. This has naturally had a tendency to keep considerable sums of money out of legitimate investments and even out of the banks about which many people have had an ignorant awe or distrust which in our earlier history was often justified. This distrust explains why in the year ending March 1, 1908, 127,623 money orders represent-

ing a total of \$8,054,894 were issued to "self" by the United States Post Office Department.

TENDENCIES TOWARD THRIFT

Thrift in Production. There are several exceptions to the general statement that Americans have been unthrifty. In the first place they have always demonstrated their great genius for thrift in production. This means that as a nation we have developed quantity production at the lowest possible cost more than any nation in the world. In spite, therefore, of the widespread tendency to waste goods after they are produced in this manner, the United States has steadily grown in per capita wealth from \$307.69 in 1850; to \$779.83 in 1870; to \$1,035.57 in 1890; to \$1,318.11 in 1904; and to \$1,965.00 in 1912.

Saving Through Life Insurance. At the same time an increasing proportion of Americans through the active propaganda of the life insurance companies have formed the habit of investing money regularly in insurance policies, a large proportion of which, especially of a decade ago, were a combination of insurance and investment. Even at the present time many people still regard life insurance as a desirable way of saving money notwithstanding the comparatively low rate of interest which is paid. So successful, indeed, have the life insurance companies been that it has been said that while England is a nation of stock buyers, France a nation of bond buyers, the United States is a nation of insurance policy holders.

The success of the insurance companies demonstrates in no uncertain way the need for safe, convenient and well known small investments. In this respect the United States has

lagged far behind the European countries. Some relief for this situation was offered by the establishment of the postal savings banks in 1910. Their deposits have steadily increased although during the fiscal year 1917-18 the number of depositors decreased from 647,728 to 612,188. Three-fourths of these depositors are said to be recent immigrants from foreign countries. As an institution for absorbing the small savings of the American people, however, the postal savings banks have been a failure.

EDUCATION FOR THRIFT IN AMERICA

Notwithstanding the use made of savings institutions in this country before the Great War, the American people were extravagant and wasteful. The habit of saving for the future was possessed by but a small element of the population. The institutions for saving money were not so numerous and well known as they should have been and those that did exist were not commonly patronized. A general campaign which should have for its object the widespread teaching and practise of individual thrift was an urgent necessity.

Thrift and Efficiency Commission of the Young Women's Christian Association. Campaigns for this purpose had been carried on by various agencies previous to America's entrance into the European war. The life insurance companies, realizing the beneficial effect of thrift on their business, have been consistent promoters of it. The Young Women's Christian Association appointed a commission on thrift and efficiency which, in its report of 1913, emphasized the importance for women of a training for remunerative employment and especially the wise spending of money and the accumulation of savings. The same ideas have been

emphasized in recent years in colleges and universities for young women where the study of household budgets has become a prominent feature of the home economics curriculum.

The American Society for Thrift. In January, 1914, the American Society for Thrift under the leadership of S. W. Straus was organized in Chicago. Through the efforts of this society the National Education Association was induced to appoint a committee on thrift, which conducted several essay contests among teachers and pupils of the schools of the country on the general subject of thrift. More than 100,000 children entered the competition for the prizes offered during the school year of 1916-17. A number of the essays and suggestions submitted by the teachers were printed as a monograph by the National Education Association and have become the basis of much of the present thrift teaching in the schools.

School Savings Banks. In 1916 the American Bankers' Association commemorated the centennial of the founding of savings banks in the United States. This commemoration afforded a convenient opportunity to call the attention of the public to the importance of the school savings bank movement in the United States. This was a movement first begun in this country in 1876 by Sereno F. Merrill, superintendent of schools at Beloit, Wisconsin. Mr. Merrill had become imbued with the idea of school savings at the Vienna exposition of 1873 where he learned of the school savings plan then in operation at Ghent and which afterwards has been operated with such great success in France. After being in operation in Beloit for five years, however, the school savings plan was dropped.

To John H. Thiry, therefore, must be

accorded the honor of instituting school savings on a permanent footing in the United States. Thiry was a native of Belgium and was therefore familiar with the school savings system of Belgium and France. On March 16, 1885, he instituted a savings bank in one of the ward schools of Long Island City, New York. At first the idea went slowly notwithstanding the fact that Mr. Thiry devoted much time and effort to the movement. In 1892, however, he was able to report that school savings banks had been formed in twelve different states with a total of 27,430 depositors holdings deposits of \$207,428.76. Thereafter the movement gained momentum, and in 1915 through arrangement with the U. S. Comptroller of the Currency, the following statistics concerning the school savings banks were obtained:

	Number of Cities	Number of Schools	Number of Pupils	Number of Depositors	Amount of Deposits
New England States.....	75	667	172,250	89,379	\$202,962.20
Eastern Central States.....	74	401	265,209	151,264	485,426.65
Southern States.....	15	32	12,427	5,122	33,328.59
Middle Western States.....	80	560	333,529	118,323	647,698.49
Western States.....	16	76	27,918	5,082	29,847.47
Pacific States.....	20	189	117,451	29,370	393,376.70
Total.....	280	1,925	928,784	398,540	\$1,792,640.10

The school savings bank movement has been materially assisted by the passing of a law in Massachusetts in 1910 providing for compulsory instruction in thrift in the public schools. Acts of the legislature in New York, New Jersey, California and Minnesota also make provision for the correlation of the school savings banks with the local savings banks.

WAR EMPHASIS ON THRIFT

Notwithstanding all the agencies for thrift and the various movements

which emphasized the virtue and necessity of saving, the people of the United States were brought suddenly to the realization shortly after entering the World War that we must conserve labor and materials as we had never done before. The money which had hitherto been spent for luxuries must be saved and loaned to the government for the purchase of vital war supplies. To these ends the people were urged to produce the greatest possible amount of food and war materials; to conserve food and fuel; and out of current savings to purchase Liberty Bonds and War Savings Stamps.

War Savings Stamps. Furthermore, realizing that the war could not be financed by the men of wealth unless assisted by the small savings of the millions of wage earners, the government provided convenient opportuni-

ties for the purchase of Liberty bonds in small denominations. Also, following the example of Great Britain an organization was authorized by act of Congress, September 24, 1917, for the sale of war savings stamps and for spreading the gospel of thrift throughout the length and breadth of the land. This organization known as the National War Savings Committee developed national plans for widespread popular education in thrift and the sale of stamps. The actual sale of the

stamps was left to each of the twelve federal bank districts. In each one of these districts a war savings director was appointed with a corps of assistants who was to establish county and city or other local volunteer organizations in each state.

The war savings stamps were sold for \$4.12 in January, 1918, advancing in price one cent each month throughout the year. At maturity, January 1, 1923, the government promises to pay \$5.00 for each stamp. The difference between the purchase price and the maturity value of the stamps makes an interest return of about 4 per cent interest compounded quarterly. Other features of the stamps made them particularly attractive small investments. They could be registered at any first, second or third class post office as a precaution against loss; and they could be redeemed at any time before maturity by giving ten days' notice to a post office. In such cases the rate of interest paid amounts to about 3 per cent. In order to preserve these attractive investment features to persons of small means it was provided that no one was to be permitted to hold more than \$1,000 (maturity value) of the stamps.

Thrift Stamps. As a means of assisting people to accumulate small sums of money for the purchase of savings stamps, thrift stamps were sold at twenty-five cents each. The thrift stamps bore no interest, but whenever sixteen of them were accumulated they were exchangeable with the addition of a few cents, varying with the month of the year, for a savings stamp. By means, therefore, of the savings stamps the government brought an attractive investment within the reach of practically every man, woman and child of the country.

The plan of the savings campaign included considerable education in the principles of thrift. For this purpose a number of pamphlets emphasizing the necessity for thrift, advising the methods of organizing savings societies, and showing methods of regular and systematic saving through individual and family budgets were distributed to the public. As the campaign proceeded, however, the financial necessities of the government became more and more pressing and there was a gradual tendency to make the thrift campaign purely a selling campaign of war savings stamps. Every organization which could possibly be induced to do so was enlisted in the sale of the stamps. The Boy Scouts and the schools undertook the work with especial enthusiasm and the result was distinctly gratifying from a financial point of view.

The sale of the 1918 series of war savings stamps began on December 3, 1917, and continued throughout the year 1918. The original quota set for the country was not to exceed two billion dollars. This was an average of about \$16.50 for each man, woman and child in the United States. One state only, Nebraska, exceeded this per capita quota with \$21.18. Ohio was second with \$16.39; South Dakota third with \$16.38. The lowest were Georgia, South Carolina and Alabama, with per capita sales respectively of \$4.78, \$4.69 and \$4.48. The grand total of sales for the entire country was \$1,015,067,471.80 which was an average per capita of \$9.64.

THRIFT CAMPAIGN AFTER THE WAR

The sale of savings stamps during the year 1918 was so gratifying to the Treasury Department that it was immediately decided to continue their

sale after hostilities ceased with the hope of making them a permanent feature of the government. The purpose was partly to raise money but especially to carry home the lesson to every American that individual thrift was as necessary after the war as it was during the war. This was an exceedingly difficult task because the natural tendency of the American people was to throw off all the war restraints and to resume the usual extravagant practises of the pre-war period. Furthermore the organization which had been carefully developed during the war fell apart with the close of hostilities. Nearly the entire corps of workers in the Savings Division at Washington and in the various federal reserve districts had to be replaced with new men and women who brought to the enormous task great enthusiasm but little experience in this field of work.

The new campaign was to be less a campaign for the sale of savings stamps and more of an educational movement in thrift. In carrying out this idea there was to be less of the popular emotional appeal and greater emphasis on the individual's self interest. It was believed that as soon as the people of the country realized the value of practising thrift and the exceptional manner in which savings stamps fulfilled the requirements of small, safe and convenient investments a steady growth in the number of investors would ensue. Thus the sale of the stamps would follow as a natural corollary of the educational movement. The objects of the entire movement as set forth by the Savings Division were to encourage people to—

2. Invest these savings in a security which pays a reasonable and profitable rate of interest and which is absolutely safe—savings stamps and other government securities.
3. Use the remainder of the income so as to get full value for the money expended.
4. Use what is bought with as much care as if it were money itself.

In conducting the thrift campaign of 1919 the Savings Division immediately decided to work through established organizations. In order to deal with these organizations several sections of the Savings Division were created at Washington with corresponding units in the federal reserve districts. The most important of these sections were schools, churches, women's organizations, publications, industrial, fraternal and agricultural organizations. Each of these sections was to develop plans for continuing the savings societies formed during the war and to stimulate the formation of new ones.

In the field of the schools the thrift propaganda found a very cordial reception. Upon several occasions the National Education Association endorsed the movement in the highest terms. At its last meeting in Milwaukee, July 5, 1919, the elementary and secondary schools were urged to make the teaching of thrift compulsory. For the purpose of this instruction the Savings Division issued several pamphlets for use in the various types of schools. Further publicity was given to the school program through the two magazines, *The National School Service* and *The School Bulletin*. Arrangements have also been made in a large proportion of the schools for the sale of thrift and war savings stamps. The pupils have responded enthusiastically to the opportunity to give a practical demonstration of their instruction in thrift,

1. Put aside as a first obligation, before spending anything, a definite portion of the income in savings for future use.

and have become regular purchasers of thrift and savings stamps.

Among the women's organizations the General Federation of Women's Clubs through its department of social and industrial conditions has worked out extensive plans for promoting the study and practise of thrift among the members of the local branches. In the industrial organizations savings societies have been promoted among the employes with the purpose of inducing them to make pledges for definite weekly or monthly savings toward the purchase of savings stamps. A large number of envelope inserts advertising the investment features of savings stamps have also been distributed by corporations when mailing dividends to their stockholders.

Through coöperation with the field workers of the Department of Agriculture the Savings Division has also been able to reach the farmers of the country. A series of twenty leaflets presenting practical thrift problems in the home were issued in coöperation with the home economics division. Widespread publicity for the thrift movement has also been gained by the work done with the labor organizations, churches and fraternal organizations.

At this time it is difficult to estimate the success of the thrift movement since the close of hostilities. The number of stamps sold during the year 1919 has fallen far below the mark set in 1918. This was anticipated from the beginning but the extent of the falling off has been an unpleasant surprise, and the figures are therefore quite disappointing. During the first six months the sales reached only \$89,856,043.77 more than one-half of which were sold during the month of

January while the momentum of the campaign of the previous year was behind the movement. During the month of June the sales declined to a little less than five million dollars. Since that time they have begun to increase again.

The causes for this great decrease in the amount of stamp sales are numerous. In the first place, with one exception, all the districts have made the movement primarily educational expecting that the sale of stamps would naturally follow. In the second place, the cost of living has been high and industrial conditions have been unsettled. The savings movement during 1919 has undoubtedly been advertised widely but it has not been convincing with a large element of the population. In other words it has been exceedingly difficult to make headway against the natural tendency to fall back into the pre-war habits of extravagance deeply ingrained in American character through years of practise.

One must realize, furthermore, that the practise of thrift is largely a moral question for each individual and that as such it is a process of years rather than months to secure a satisfactory universal response to such an appeal. It is for this reason that the success of the thrift movement now being prosecuted with such vigor can never be properly measured by the number of savings stamps sold. The good effects will be felt all through our economic life and many of them will not be fully realized for years to come. Moreover, the task of making out of the American people a nation of thrifty men and women is a work of years, but the enormous national and individual benefits accruing therefrom will justify whatever time and effort is expended on it.

Psychological Notes on the Motives for Thrift

By EDWARD L. THORNDIKE

Teachers College, Columbia University

A COMPLETE inventory of the motives for thrift and appraisal of each from the point of view of the common good would require thought and investigation by many men for many years. It would presuppose adequate study of the actual working of scores of agencies such as savings banks, building loan societies, installment-plan selling, deferred salary bonuses, and the like; and indeed of all forms of delayed *versus* immediate use of purchasing power.

In default of such adequate information, principles should at least be based on what knowledge is available of the ways in which, and the reasons for which, children and adults do save—that is, delay the use of such purchasing power as they from time to time obtain. The writer, however, lacks even this knowledge and can offer only certain facts and principles based on the general psychology of motives. These may perhaps be helpful.

PSYCHOLOGICAL BASIS OF SAVING

The original nature of man,—the equipment of capacities and tendencies, desires and aversions which he inherits as he inherits a back-bone, upright posture, and power to laugh and cry—predisposes him rather against saving. Except for the tendencies to bring an attractive object to one's lair and cherish it there and to collect and hoard certain small objects, man is by nature improvident. The parental instincts lead him to feed, nurse, cuddle and protect the infant and child, but not to save for

its future welfare. The tendencies to acquiring and hoarding may be used as a starting-point for habits of saving which may later be refined into habits of real thrift: they are, however, by nature productive only of indiscriminate saving of material objects; and it is doubtful whether they do much more good by the energy they supply, than they do harm by its undesirable manifestations.

On the other hand there are, working against thrift, the very strong original tendencies toward gratifying the gross sensory appetites, and toward display, mastery and approval. Everybody understands the potency of the sensory appetites, and their essential conflict with thrift. The cruder inborn passions of approval, getting and mastery and their effect on thrift are not so well understood.

Natural Tendencies of Man

The essential facts are as follows: To the situation, "intimate approval, as by smiles, pats, admission to companionship and the like, from one to whom he has the inner response of submissiveness," and to the situation, "humble approval, as by admiring glances, from anybody," man responds originally by great satisfaction. The withdrawing of approving intercourse by masters and looks of scorn and derision from anyone originally provoke a discomfort that may strengthen to utter wretchedness. The reader will understand that the approval and disapproval which are thus satisfying and annoying to the natural man are far

from identical, in either case, with the behavior which proceeds from cultivated moral approbation and condemnation. The sickly frown of a Sunday-school teacher at her pupil's mischief may be prepotently an attention to him rather than the others, may contain a semi-envious recognition of him as a force to be reckoned with, and may even reveal a lurking admiration for his deviltry. It then will be instinctively accepted as approval.

Darwin long ago noted the extraordinarily ill-proportioned misery that comes from committing some blunder in society whereat people involuntarily "look down" on one for an instant. Except for him, little attention has been paid to the originality of the hunger of man for the externals of admiration and the intolerability of objective scorn and derision. Yet these forces of approval and disapproval in appropriate form, from those above and those below us in mastery-status, are and have been potent social controls. For example the discipline of a humane home or school today relies almost entirely upon such approval from above, and finds it even more effective than severe sensuous pains and deprivations. The elaborate paraphernalia and rites of fashion in clothes exist chiefly by virtue of their value as means of securing diffuse notice and approval. The primitive sex display is now a minor cause: women obviously dress for other women's eyes. Much the same is true of subservience to fashions in furniture, food, manners, morals, and religion. The institution of tipping, which began perhaps in kindness and was fostered by economic self-interest, is now well-nigh impregnable because no man is brave enough to withstand the scorn of a line of lackeys whom he heartily despises,

or of a few onlookers whom he will never see again.

Best of all illustrations of the potent craving for objective approval, perhaps, is offered by Veblen's brilliant analysis of the economic activities of the leisure class. These he finds to be essentially vicarious consumption and conspicuous waste, or the maintenance of a useless retinue and public prodigality in order to show that you have more than you can use, and so to fix upon you the admiring glances of those who can afford to waste less or nothing at all.

To manifest approving and disapproving behavior is as original a tendency as to be satisfied and annoyed by them. Smiles, respectful stares and encouraging shouts occur, I think, as instinctive responses to relief from hunger, rescue from fear, gorgeous display, instinctive acts of strength and daring, victory, and other impressive instinctive behavior that is harmless to the onlooker. Similarly, frowns, hoots and sneers seem bound as original responses to the observation of empty-handedness, deformity, physical meanness, pusillanimity, and defect.

As things are and have been in most communities, thrift reduces, or at least delays, the chance to win approval by "relief from hunger, gorgeous display and other impressive behavior," and to attain a superior mastery-status. The "tight-wad" is scorned; the meanly dressed girl feels inferior. In popular juvenile and adult fiction, which mirror rather faithfully the instinctive proclivities of man, the necessity for thrift is at the best a burden which it is heroic to endure. The exercise of prudence about money and property is tolerated if not actually scorned.

In a less degree the instincts of adventure, rivalry, sex pursuit, parental love and general kindness are also

against thrift. Parents, for example, tend by original nature to indulge their children in food and toys, but not to take out life insurance. To make man thrifty his original love of notice, approval, mastery and sport, as well as his cruder animal appetites, have to be counteracted by other tendencies or amended by dexterous training.

Inhibition by Rational Insight

These may be counteracted in many ways, two of which are of special interest,—inhibition by rational insight and inhibition by unreasoned repression. Inhibition by rational insight is one aim of training in good homes, schools, shops and factories. Children and others are taught by precept and by example that twenty dollars is better if saved for a bicycle than if frittered away in buying candy and trifling entertainments. They are taught that it is well to provide for future as well as for present needs, and for unforeseen needs as well as for those at present envisaged. They are taught to care for property which they or others may need later, even though there may be a present enjoyment in destroying or neglecting it. In general, they are taught the meaning of money and property as means of deferred as well as present enjoyment and purchasing power, and to consider their deferred use. More or less elaborate attempts may be made to teach them to esteem prudent behavior as well as, or in place of, size, beauty, courage, gorgeous display and lavishness. All this is a part of the general program of teaching wisdom and morality, and is useful if enough pedagogical skill is used. The person learns to value thrift rightly and redirects his instinctive appetites by such learning.

Inhibition by Unreasoned Repression

When sufficient pedagogical skill is not used to give an appreciation of the reasons, or when the reasons given for being thrifty are not really rational, we have inhibition by unreasoned repression. In this case the reason ostensibly associated with the acts of saving is incomprehensible or valueless to the saver, the active reason or motive for him being something quite different. Thus a little child may be taught to put his money in a bank "because all good children do so" or "so that you will have money for an education" or "because it is wrong to spend all your money for candy and toys." The active force in his saving is not acceptance of these maxims, but fear of parental rebuke, or love of praise, or the pride at displaying his savings, or a more comfortable feeling when other children are displaying theirs.

In such cases the child often, perhaps usually, forgets what the active force was and has left chiefly or solely a diffuse feeling that he ought to save, because it is the thing one ought to do, what the philosophers might call a categorical imperative. Such a motive is strong so long as the individual cherishes it. He can withstand arguments and persuasive attacks. Holding his position for no reasons that he knows of, he cannot be dislodged from it by reasons. The motive is weak in the sense that if it is once lost, it can be recovered only by slow re-creation.

REDIRECTING THE TENDENCIES OF APPROVAL AND SCORN

Instead of thus counteracting prodigal tendencies from without by reasoned or unreasoned habits, we may try to amend them, attacking them as it were from within.

The desire for approval can theoretically be made to favor thrift as much as it now favors lavishness. And practically such redirection of popular applause can be carried much further than past history might lead us to expect. Modern advertising, if given free scope, can almost guarantee that in a given year any defined population will approve a color combination which a year ago it detested.

It would probably not be hard to get the world to pity or scorn a man who had to have a chauffeur drive him as it now pities or scorns a man who has to be carried in another's arms. People could be taught to regard the child who went to a private school, with large tuition fees, as an unfortunate who was not expected to get on in the world without special favors,—as a "lame duck" who required a large handicap, as the weak mind who had to have a pedagogical doctor and special medicine. The woman who lived in a palatial house with a retinue of maids and lackeys might come to be viewed as insane—like a woman who should wear twenty gowns one over the other or ten hats one on top of the other, to show that she could afford that many, or who rose each half hour of the night to change to a different bedroom.

If girls and women all wore a standard dress and if it became the custom to regard any excess of quality or adornment as the effort of an inferior physique to hide its unattractiveness, the misery of unsatisfied longings for personal adornment in the poor, and the still more debasing glorification of one's self for merits really belonging to one's dressmakers and milliners, might be notably decreased. In certain girls' schools something much like this is actually attained.

Whether we try to inhibit prodigal tendencies by rational insight or to amend them by attaching the zest of adventure, power, notice and approval to thrifty behavior, success requires not only that we use right principles of persuasion and habit formation, but also that we be ingenious in the details of human engineering. The former are now fairly well known; the full development of the latter will require the time and thought of many gifted men, and much experimentation and verification. The concrete suggestions which make up the rest of this chapter are at best only a millionth part of what adequate talent and work may achieve.

IMPROVING THRIFT BY RATIONAL INSIGHT

The worst form of thriftlessness is expenditure for objects or conditions which give no essential satisfaction to the buyer or anybody else. Such utter waste is of greater magnitude than might be supposed. We buy many things which we soon find out we do not want at all. We buy vastly more things which we think we want, but only because we have been taught to believe that we want them. Let some one teach us to believe that we do not want them and our net satisfactions are increased with a decrease in costs. The coat I am wearing has buttonholes and buttons on the sleeves whose only value hangs by a convention which is itself essentially valueless to all. We pay for many objects and conditions when a different and cheaper object or condition would have suited us far better. Thus to the average girl of eighteen, an automobile and the privilege of driving it is far more satisfying than the same automobile and a chauffeur to drive her in it. To the

girl's mother the pride that her daughter can take care of herself may be far more satisfying, as well as cheaper, than the knowledge that there is a servant to take care of her. The foolish father pays ten dollars for carved animals for his child who would infinitely prefer a fifty-cent knife and a stick of wood to cut. Leaders of the public should teach it to know what it really wants and to save the expense of paying for what makes it miserable.

It has been an unfortunate custom for poets, philosophers, literary men and men of science to regard money as in some sense ignoble. We have been taught that the cultivated man cares little for money, or that money will not buy the best things in the world, or that we do not wish our children to care especially about making money. This is, however, false or at least fallacious, what is really meant being properly that the average uses of money are less noble than the average uses of wisdom, honesty, courage, female virtue, health and the like. Money is purchasing-power, and wisdom, honesty, courage, female virtue and health are purchasable. Purchasing power rightly used could, for example, reduce prostitution by a large percent, and eliminate tuberculosis entirely.

The wise and cultivated man may give the world a new scientific truth directly, if he has the talent to discover it. Any man can ensure giving a new scientific truth to the world if he will purchase a perennial research fellowship of \$10,000 instead of building himself a house for a quarter of a million dollars. A woman may add one to the roster of female virtue by preserving her own, but she can ensure the addition of many by spending money judiciously to provide for

healthy recreation of girls or for the segregation of the feeble-minded.

The Nature of Saving

The fact that saving is simply deferred spending is perhaps worth making clearer to children and adults of uncritical minds. Saving is often felt as an essential deprivation, for example by children whose savings go year after year into a bank and never come out. If he is to be rational, the saver should think of his bank account as a fund of purchasing power; and should from time to time spend money that he has saved. Saving thus becomes dissociated from mere self-denial and a restricted life and associated with the sense of mastery and self-confidence which ordinary human nature so highly values. It is too much to expect children or unintelligent adults to save rationally for the needs of old age or sickness or for a reserve for unforeseen emergencies. Prudence with them may consist in going without candy to have a bicycle, or in denial in food, dress and amusements to have a home of their own. The foresight thus encouraged may extend to an appreciation of the value of a reserve of general purchasing power.

It may be desirable to give more people and at a younger age the conception of true economic waste. Many children and adults would be willing to save for the public if they were brought to consider the matter. They destroy in neglect what they cannot themselves use for their own satisfaction, not because they wish to injure others to save themselves a very slight inconvenience, but because they do not consider the interest of the others at all. Their deficiency is intellectual rather than moral, and is curable by reasoning and persuasion.

Also many children and adults confuse the virtue of generosity and the virtue of true economic thrift and secure the former at the expense of the latter. In the common case of discarded clothes, for example, the average American would regard himself as generous and thrifty when he gave away a suit of clothes. He is generous to the extent of the money value of the old clothes minus the money value of his own trouble in selling them to an old-clothes dealer. But he cannot credit himself with any true economic thrift, except in so far as he chooses as the beneficiary someone who will surely make effective use of the clothes. True economic thrift is in general much more surely secured if he sells the clothes; the proceeds he may use as generously as he chooses.

The Stimulus to Saving

The interest in savings is accentuated by a concrete and obvious thing to embody, represent, or at least measure it. A bank with the pile of pennies therein increasing; a farm growing by the purchase of field after field—these are more stimulating to the average mind of young or old than a bank book with ink entries or a safety-deposit box of securities. The saver's record of his savings may well be made more corporeal and obvious than it would be made if the clerical convenience and accuracy of the record were the only desideratum. In the case of little children, for example, the savings account proper might be duplicated by affixing a red seal for each quarter, a silver seal for each dollar, and a gold seal for each five dollars. Passing the ten dollar mark might be celebrated by promotion to a larger-sized book. These devices may be criticized as

childish, but with little children childish motives may well be employed.

WHERE REDIRECTING THE TENDENCIES TO APPROVAL AND SCORN SHOULD BEGIN

It appears probable that men and women of notable achievement or popularity or both can encourage thrift greatly by denying to themselves and their families all forms of ostentatious expenditure. If the ablest lawyers, surgeons, bankers, manufacturers, ball-players, athletes, salesmen, musicians and actresses show a contempt for wasteful display in their lodging, service, food and dress, the fashion will in large measure spread to those who observe them directly and to the multitudes who observe them through the media of newspapers and magazines. If the most popular politicians, singers, authors, and leaders of society (whatever that may be) let their merit attach itself to plain living, luxurious display will soon lose a large measure of its reinforcement. It might become not only vulgar but also eccentric, the behavior of a crank.

Certain forms of ostentation that were considered entirely suitable five hundred years ago would be considered vulgar now, because men and women of eminence have abandoned them. Possibly the same process of association could attach vulgarity to all forms of conspicuous waste. As fast as Veblen's conspicuous waste is made synonymous with conspicuous vulgarity, imbecility and inferiority, it will tend to be replaced by conspicuous thrift, or (if we are ingenious enough in our social engineering) by modest thrift.

Thrift should then be begun with the rich, important, able, and popular. So long as it is advocated as the virtue

of the poor and lowly, the young and struggling, the propaganda will be largely self destructive. Jeffersonian simplicity can be inculcated in a land where universal ambition is encouraged only when men of Jefferson's status live simply. It is not only bad taste and bad morals for the ostentatious rich to preach thrift to the poor; it is also largely time wasted. The man who by thrift in youth is able to indulge in luxurious display later is more of an encouragement to luxurious display than to thrift. His example

when he was an unknown struggler is of little force; what he does when he is known as successful has publicity and power.

If the world as a whole is to be efficient, its mighty ones must distinguish sharply between expense for efficiency and expense for display, and leave the latter to peacocks, monkeys, the feeble-minded, and women who have to make themselves saleable. They must also, and this will be much harder, teach their wives and daughters to do likewise.

Thrift in the School Curriculum

By W. H. CAROTHERS

Professor of Education, Kansas State Normal, Emporia, Kansas

ANALYZED out of the social heritage of race experience and the environment which surrounds us are certain elements which society has found desirable stimuli to affect the generation of learners. These elements, properly organized, graduated, and classified constitute the school curriculum. Every body of subject matter which has found a permanent place in the curriculum has at some time stimulated responses in the learner that better adapted him to the world in which he lived. For convenience in treating the phenomena of the mind, and to clarify our own thinking, certain names have been given to the more or less permanent effects which these stimuli and their responses have on the nervous system of the person who experiences them. Arranged in the order of simplicity they are habits, ideas, ideals, prejudices, and attitudes. It is the business of the curriculum to bring about those changes and to realize those values which society has considered of greatest worth.

THE BROADER CURRICULUM

What has been described is the curriculum in its limited sense. The broader curriculum is the learner's total environment and includes all the influences that affect a person from birth to death. The limited curriculum is an attempt to bring order out of chaos and to control the elements which should enter into the child's education. The school is often powerless to prevent outside stimuli from creating permanent and undesirable

effects. Imitation is an instinct of great potency in young people, a fact which robs the school of much of its power in its anti-narcotic campaigns so long as adults use tobacco in the presence of children. The extravagance and luxury of the modern city which attract the daily attention of the rising generation and appeal to the powerful social instinct of display will nullify in part the efforts of the teacher in thrift education. The broader curriculum will continue to have its effect, but the school will always have the advantage over the capricious phenomena of the outside world in training the young.

WHAT CAN BE TAUGHT

The question often arises whether this idea or that thing can be taught. Can we teach patriotism? The answer is that all the patriotism we now possess has been taught to us, for we are not born in possession of this or any other sentiment. The infinite capacity of the human mind to be influenced is the most significant fact in our social life and one that has been only narrowly appreciated. Can we teach people to save in the midst of plenty? The answer is, you can teach people anything in the world that you seriously want to teach them. There are, however, many qualities desirable in the twentieth century which only careful training, requiring time, patience, and effort can bring about. Thrift is one of them. Nature has not been generous in her endowment of this quality. Opposed to the

weak collecting instinct which manifests itself in the bulging pocket of the boy of ten—an instinct adapted to a period when the child picked up small particles of food strewn among the debris of a cave—is the strong social instinct which manifests itself in gaudy display and ostentation. The difficulty of a problem, however, may easily add interest to it.

THRIFT EDUCATION THROUGH SPECIFIC HABITS

The first and most universal method of training was habit formation. It remains the basic fact in the elementary systems of education throughout the world to-day. Since the great majority of habits are fixed at an early age and remain permanent throughout the lifetime of the individual, James has spoken of them as constituting 'the great fly-wheel of society.' For the same reason it is of vital importance that thrift habits begin to take form in the kindergarten and continue throughout the elementary school period. The saving of paper and pencils, care of clothing and of school equipment, the school bank, purchase of Thrift Stamps and War Savings Stamps, and the salvaging of community waste are desirable means of establishing thrift habits. Spasmodic efforts will not bring results. The laws of habit formation forbid exceptions and accentuate the importance of regularity over mere repetition. In view of the greater ease with which habits are formed in the majority of people and the fact that only a small percentage of the population receives considerably more than a common school education it is primarily to the power of habit (so-called second nature) on which we must rely as the chief factor in the solution of our problem.

EDUCATION FOR THRIFT THROUGH IDEAS

The second method of education is through the use of ideas. While ideas are present in the earlier training they rise to prominence in that period which is included in the years devoted to the junior high school. Secondary education, which rightly belongs to the age of adolescence, has been defined as the rational interpretation of experience as the basis of future conduct. This means that the child in this stage of development demands a reason for the habits he has formed and the acts he is called upon to perform. It is properly the scientific age when the mind attempts to grasp principles and construct systems for unifying the scattered elements of his experience. This is the time par excellence for laying the foundation of sound economic thought by giving the child an insight into the economic world in which he lives.

It has been said that we are a nation of economic illiterates. If that be the case—and it is guilty only of mild exaggeration—the duty of the school is plain. It is no less true that if the defect is to be remedied the educative process must begin where the larger numbers are. The rapid depletion of the ranks of school children from grade to grade make an early beginning necessary if results are to be expected.

It has been affirmed that attempts to teach political economy in the secondary school have not proved a success to date, and that such efforts as have been made have been a waste of time. This has been due no less to the fact that teachers have been signally unprepared to teach the subject except in the form of dry subject matter of a book than to the lack of pressure from the outside. Very much

the same condition existed with reference to civics up to the time that Bryce wrote his *American Commonwealth*. Teachers had caused children to memorize the dry facts of the Constitution because no one had yet been able to see the working of American government in his own community. There is seldom much difficulty in teaching children what teachers themselves understand and appreciate.

Economic Principles in the Secondary Schools.—The first task, therefore, in preparing children for an understanding of the principles of thrift is the preparation of teachers. There has never been a period in the history of our nation when so many carelessly conceived economic theories were occupying the minds of great numbers of people. It is the time-old danger of a 'little learning' applied to a big problem. So little careful thought has been given to the subject of political economy that men have 'made the wish the father of the thought' and have confused desired ends with the means of attaining them. There is no reason why the child's grasp of economic laws should not unfold gradually and naturally with the widening and deepening of his experience. The logical time for the beginning of this development is the early years of the secondary school and belongs logically with a course in civics. The fact that the productive capacity of one man or a group of men is limited, and that the person who owns three or four automobiles and keeps a house full of servants to care for his personal wants takes labor out of the production of essential commodities can be made very plain to the secondary school child, and it may well be held as a sound principle of good citizenship.

The shroud of ignorance which has

enveloped the principle of lavish spending is evidenced in the remarks of bystanders who observe that great expenditures of money, though unnecessary, give labor to the poor and keep money in circulation and make business better in the community. All that is necessary to correct these fallacies is to put the correct ideas into the minds of school children and this dangerous superficial philosophy will disappear from our thinking.

The idea once implanted in the minds of every secondary school child in America that we as individuals are the great employers of labor, and that through our purchases we determine what men and women shall do, what materials they shall use, how much of their time shall be wasted in making gewgaws that should be devoted to making sensible things,—that idea will fructify and yield manifold returns.

There are a number of economic laws which the secondary school child can grasp but this does not mean that the way to teach them is through a formal text in economics. Our economic life is so much a part of a work-a-day existence that the study of it without the imprint of the marketplace, the farm, and the home, lacks reality. It becomes formal, lifeless, and meaningless.

THRIFT TAUGHT THROUGH IDEALS

The third great method of recording experience in the nervous system of the child for purposes of better adjustment is through the use of ideals or emotionalized standards. These are elements in the child's experience which when shaded off into their secondary forms, namely, tastes and prejudices, have a powerful influence in shaping character.

It required only a comparatively short period of time to create a prej-

udice against alcohol in America, and although scientists state that so ancient is the custom of drinking liquor that it is embedded in the fiber of human nature itself, the habit is passing, the miracle being wrought before our own eyes. The prejudice began to take form, and as it grew it crystallized into words with repulsive connotations. The poetic "mint julep" and the "little drink" for sociability began to lose ground in the popular mind, and "booze" with all its sordid associations got the upper hand. The power of prejudices early formed in the minds of a generation is difficult to estimate. The emotional reaction against civic corruption in America crystallized into the word "graft" which became a term of contempt, and as public consciousness was aroused by the stench of corrupt politics the words "graft," "boodle," and "pork barrel" constituted the weapons with which the common man fought his battle for decency.

Among current social and economic customs the practice of conspicuous waste for the gratification of the instinct of display and as a means of flaunting in the eyes of the onlookers superior economic status is open to attack on the grounds that waste is a sin against society. One may well speculate on the change that could be made in the public mind by a campaign of education in school and press against this deep-seated economic evil. In my judgment it will come, using as its weapon a term or phrase which will bite into the public mind until the evil from which it sprang has been eradicated. Briefly summarizing, I have attempted to show that the general method of thrift education should take the form, first, of specific habits; second, of

ideas or knowledge; and, third, of ideals and prejudices.

SUBJECT MATTER OF THE CURRICULUM

Arithmetic.—We may properly pass to a consideration of the subject matter of the curriculum under its various subdivisions. In the subject matter of arithmetic, the budget, interest—simple and compound, problems relating to industry and thrift can be used as important means of accentuating the importance of thrift.

The habit of budget-making is so foreign to us either in our private or public life that the term is apt to be vague in the mind of the average person. A simple type of personal budget to acquaint the child with the principles of foresight, system, and accurate knowledge from day to day is shown below:

MONTH OF MARCH, 1920			
Income:		Savings.....	\$1.00
On hand ..	\$0.75	Expenditures:	
Allowance .	1.50	Books	3.00
Work.....	4.50	Paper .....	.20
		Pencils ....	.10
		Collars ....	.50
		Necktie....	.75
		Amusements	.50
		Sundries ...	.20
		Balance....	.50
Total ...		Total... \$6.75	

Children can be taught the art of budget making, and a generation of skillful budget-makers will be a generation of thrifty people among whom fewer business failures will result than is true of the present.

The wonders of compound interest acting on capital to which regular increments are made belong in the field of arithmetic, but this aspect of the subject is receiving little if any attention in present day arithmetic courses.

The reasons assigned for the omission are doubtless plentiful, but the principle of compound interest is not unknown to our great insurance companies, banks, and other financial institutions, and is, in fact, the cornerstone of their success. It is no less important for the laboring man, and the great mass of people of slender means to become acquainted with the theory and practice of compound interest.

It may be said that since the problems involved in budgets and the principles of compound interest are not necessary in making adjustments to ordinary business life they should find no place in the curriculum. This is the view taken by a certain modern school of educators, but it should be recalled that education means much more than mere mechanical adjustment; it means superior intelligent adjustment, and as such demands training and instruction which will prepare the child to analyze and solve the more subtle problems which do not lie on the surface.

The mathematics of thrift has been carefully studied by financial experts who know, for example, the vast difference between one-tenth and one-twelfth of one per cent when applied to modern finance, but little opportunity is given the average person to get an insight into the workings of these subtle elements in financial success.

Building and Loan Associations, savings banks, insurance, annuities, and the special types of banking institutions which operate a "chain" of banks in various cities are founded on the mathematical law of compound interest. They are apt to be looked upon as the working of some mythical potency which favors the capitalist at the expense of the worker.

History.—The second subject which in virtue of its subject matter and organization provides a fertile field for thrift instruction is history. Thrift is an active principle in social evolution and the growth of civilization is conditioned by its practice.

History furnishes us with numerous instances of primitive peoples who, through their failure to practice the principles of thrift and economy, lived in almost continuous poverty. As soon as the individual men and women of these tribes began to make wise use of their surroundings they evolved into civilized nations. In these countries personal comforts and cultural life were possible. Moreover, a nation built upon so sure a foundation has nearly always been able to withstand the attack of enemy countries which lacked this sturdy strength of thrifty citizens.

There are, also, numerous instances of powerful civilized nations whose citizens have forgotten the cardinal virtues on which their forefathers built the nation. In such instances the waste and extravagance practiced by the individual citizens contributed in no small degree to the decline and fall of those nations.

In this way history makes very apparent not only the desirability of, but also the necessity for individual and national thrift. In each instance the teacher should correlate the examples in history with the conditions and necessities of the present time.

To say that our courses in history have emphasized the political and military aspects of society to the loss of the social and economic is a trite criticism, but history must uncover the foundations as well as the superstructure of institutions of the past. To recite the common, homely virtues

of mankind is a prosaic task and the story is likely to fall on indifferent ears, but the choice unfortunately does not rest with us. Fortunate is the nation which learns to enjoy the things that have to be done, for the inexorable laws which shape the destiny of nations are concerned only with what people do and not with what they like. Thrift is one of those commonplace virtues which by its homely familiarity is apt to breed contempt. Under such circumstances the common sanction of society is required to raise the habit to a position of dignity. History always has at its command a powerful instrument for creating attitudes and perspectives which determine social sanctions of the present.

Geography.—Closely allied to history is the study of geography. The great program for the conservation of our natural resources inaugurated during the Roosevelt administration should be carried on as a part of the regular work of the school. Living in the midst of abundance we have the greatest difficulty in seeing that the supply of natural wealth is limited and that the constant increase of population is destined to reduce the American standard of living unless we deal more sanely with our resources.

The Belgian Commission sent to the United States commented on our lack of foresight as follows:

We saw miles of young trees being destroyed by fires started by engine sparks, and left to burn. We saw farms divided by wooden fences that contain enough lumber to build the homes of all Belgium. Everywhere in the

country was wasted land. If we had such bounteous wealth of land and other resources as are wasted here, we could transform our people into conditions of prosperity beyond dreams.

The rising generation should be made to realize its duty to the future with respect to the bounties of nature, and it rests with the school, the one great institution of learning left under direct public control, to create deep-seated prejudices against this great transgression of the American people.

CONCLUSION

The method and subject matter of thrift instruction has been briefly outlined in the foregoing paragraphs. Not all of the departments of the school which are equipped to aid in this educational movement have been mentioned. The field of English, including reading and composition, is an unworked educational gold mine for thrift education. In general, in view of the rapid multiplication of subjects it will be wise to correlate thrift instruction with other established courses in the school until the later years of the high school, when a course in economics emphasizing the principles of thrift may seem advisable.

Of fundamental importance is the immediate introduction into the curriculum of a program which will provide for the building of good habits, the creation of correct ideas and worthy ideals of thrift. The nation waits upon the school for this service, and we may depend on the judgment and resources of the American educator to perform the task.

The Consumer's Responsibility¹

By HARTLEY WITHERS

Editor of *The Economist*, London

WE are all of us consumers or money-spenders, and all of us, including the very poorest, could spend our money to better advantage if we tried, and make the world a much pleasanter place for ourselves and others.

"Why should I try?" asks someone very plentifully endowed with common sense. "What has it to do with me? I earn £1,000 a year, and I work for it. I shouldn't be paid this income if I wasn't worth it to somebody, and why on earth shouldn't I spend it exactly as I like? I am not responsible for our economic system. It hasn't treated me badly. I pay a lot of people to look after the government of the country and it's their business to put things right if they're wrong. I entertain freely; I give plenty away to objects that I think deserving. It's my own money, and why shouldn't I do what I like with it?"

First of all, let us try to frighten him a little. If there is any likelihood that a real economic improvement can be brought about by more sensible spending, it is surely better to try this method instead of letting things drift towards terrible experiments like general strikes, and the possibility of bloodshed and perhaps revolution. Surely it is plain that never before in the world's history has there been such world-wide unrest among the workers. Those who are in sympathy with the

workers and think that they ought to, and must, get a bigger share of the world's goods, are glad to see this unrest. But to the man who is quite content with the manner in which wealth is at present distributed, and only wants to enjoy his own income, it must be a most disquieting and uncomfortable system. For he feels that he is really much more vulnerable than the workers. He must have his three good meals a day, perhaps four. They are quite used to going hungry—one of the most pathetic facts in language is the existence of a regular word for it in the north country, to "clem." If the workers could only solve the question of unity among themselves, so that a strike meant a really unanimous cessation of work by them, a general strike would become a terrible weapon against people who do not like to miss their accustomed creature comforts for a day. It is easy to talk about the strong hand and martial law, but the strong hand is a game that two sides can play at, and martial law may be met by martial lawlessness.

But if our common sense friend is a hearty, robustious person, who is not going to be frightened by phantom pictures of what might happen, we must try to persuade him that he is wrong in his confidence about his economic value and his right and title to all the good things that he enjoys. We must put it to him that of course he must do just what he likes with his money, but that possibly if he thought the matter out he might like to use it in a manner that is a little different

¹ This is an article prepared for the use of the British National War Savings Committee which Mr. Withers sent as his contribution to this volume, also.

from his present method of spending. Because if he has done us the honor of reading the preceding pages he has been brought face to face with the fact that by spending money on luxuries he causes the production of luxuries and so diverts capital, energy, and labor from the production of necessities, and so makes necessities scarce and dear for the poor. He is not asked to give his money away, for he would probably do more harm than good thereby, unless he did it very carefully and skilfully; but only to invest part of what he now spends on luxuries so that more capital may be available for the output of necessities. So that by the simultaneous process of increasing the supply of capital and diminishing the demand for luxuries the wages of the poor may be increased and the supply of their needs may be cheapened; and he himself may feel more comfortable in the enjoyment of his income.

Then we proceed to appeal to that excellent common sense of his, and ask him whether he is quite sure that because he receives £1,000 a year he is really worth to the community ten times as much as the artizan who is paid two pounds a week. How much of his £1,000 a year does he really owe to himself and his own exertions and abilities, and how much of it ought to be credited to his education and nurture and the long start with which he began life? If we all started from scratch, he might fairly make some claim to having earned his success himself, though even so he would have to allow a very wide margin for luck; for his will be a rare experience if he cannot call to mind schoolfellows of his own, just as well endowed as he is in character and ability, to whom fate has only opened her purse to the

extent of a few hundreds a year. Moreover, if he will remember the store of intelligence that lies dormant among the workers because they have no real education to awaken it, he will see that if the career were actually open to talent, and all talent had a genuine chance of being developed, it is possible that his abilities and attainments might be of quite commonplace standard. As it is, owing to this lamentable waste of the intelligent material that lies ready to our hands, the business world is always crying out about the scarcity of available brains.

Moreover, still appealing to his common sense, we ask him to wonder how much use his own abilities would be to him if it were not for the rest of the community that gives him ease and security and supplies him with all the comforts and luxuries that he enjoys. The argument so commonly used about landlords—that it is their neighbors who make their property valuable, by wanting to live on it—is true in a certain degree about all of us. Whatever our gifts of mind and body may be, they would avail us little towards achieving comfort, to say nothing of luxury, if we found ourselves planted by ourselves on a barren mountain top. Man, as a solitary unit, cannot acquire the well-being that is now enjoyed by the comfortable classes; he can only do so as a member of an economic brotherhood. We are accustomed to think of our economic civilization as based on competition, but in fact coöperation is much more important to it, for it is impossible to compete unless one first coöperates. This being so, since all of us who are comfortable and well fed and easy are so by the exertions of our fellows, is it in accordance with common sense,

which is closely allied with common sympathy, to stand by and see millions of those who help to provide our comfort go short of the necessities of life if we can do anything to better their lot? Is it "good business"—for all this question is a matter of business—to spend money on things that one does not really need, if by so doing we impoverish the workers and sap the strength of the nation?

"But," we shall be told, "there always must be rich and poor. It's a law of Nature that some shall be strong and some shall be weak, and that the weak shall go to the wall."

Of course there must always be rich and poor. Even if all our incomes were made equal tomorrow, there would still be a great difference in the degree of our welfare, for some men can live cheerfully on a hundred a year, and to others a thousand is penury. But because there must always be differences that is surely no reason for sitting still and leaving things alone if by a slight change in the habits of the spending classes some of the more glaring differences can be lessened.

As to the law of nature and the necessary division of mankind into strong and weak, is it safe to appeal to it before we have made quite sure that those now at the top are really the strong and those at the bottom are the weak? If the law of nature really had free play we might see a very startling redistribution of the good things of the earth. "Were there," says a great scientist and thinker, "none of those artificial arrangements by which fools and knaves are kept at the top of society instead of sinking to their natural place at the bottom, the struggle for the means of enjoyment would ensure a constant circulation of the human units of the social compound,

from the bottom to the top and from the top to the bottom."²

Civilization, in fact, consists chiefly of a series of triumphs over the laws of nature. In a natural state, if we had a decayed tooth it would go on decaying till it gave us such pain that we should pray some kindly brother savage to batter it out with a boulder, and it is likely that he would knock out two or three more with it. Civilization provides a dentist who stops it for us and preserves it as a useful member of our anatomy. In a natural state, when dimmed eyesight and dwindling muscular power made it impossible for us to get food by hunting or fishing we should either die of hunger or be mercifully eaten by a wild beast. Civilization keeps us alive and useful long after the laws of nature would have forbidden us to cumber the earth, and finally lets us die comfortably in our beds. If the laws of nature were given free play, any question at issue between a set of Northumbrian pitmen and the shareholders for whom they work would very shortly be settled, and the shareholders, or their remnants, would be found shouting for the police. As it is, the artificial arrangements of which Huxley complains, work for the benefit, not only of fools and knaves, but of all who lead comfortable and sheltered lives, and have got nice well-paid posts, largely through the accident of being born in a certain class, and having been taught certain things at school, chiefly by their schoolfellows. We had better be very careful about talking of the survival of the fittest, for the more closely common sense looks at the matter the less certain its possessor will be that in a really natural struggle he would be among the survivors. The reason why

² Huxley, *Evolution and Ethics*.

man, naturally a very weak animal, has triumphed over all his natural enemies is because he had the good sense, by coöperation and care for the weak, to overcome much of the terrible waste that is implied by the unrestricted working of the law of the survival of the fittest. He has acted by the weaker members of his tribe, who, by natural laws, ought to have perished, as the dentist acts by our weak teeth, and kept them as useful members of society. In fact, we have carried our conquest of natural laws so far that a man's grasp of the good things of life depends much less on his strength and courage and ability than on the position and circumstances in which he happens to be born. "Virtue is of little regard in these costermonger times," and we are faced by a state of things under which large numbers of us, and those by no means always the weakest, do not get a fair chance of life. Common sense surely compels us to do anything that can be done to put this right, and in the meantime advises us not to talk too loudly about the laws of nature, if our position in the world depends on artificial laws which defeat them.

But common sense has still another cartridge in its belt. We shall be told that, even if we could persuade the spending classes, by more sensible spending, to increase the supply of capital, raise the wages of the workers, and cheapen the necessities of life, we should not have touched the most serious side of the problem of poverty, which is the existence of a host of people who, from mental and bodily weakness, are not fit to work, and so could not benefit by an increase in the wages of the workers. This is quite true, but I never suggested that the reform put forward in these pages

could, if adopted, cure all the economic evils in the world. It is very safe to say that any remedy which is expected to cure everything is almost certain to cure nothing. But at least it may be claimed, if wages were raised and the prices of necessities were lowered, that the creation of these unfortunate folk, whom heredity and environment have combined to deprive of man's birthright, would be sensibly checked, and, if the process were carried far enough, would be stopped altogether. Then all that would have to be done would be for the State either to see to it that they did not reproduce themselves or to take such measures for the care of their offspring that environment might have a fair chance of undoing the hereditary weakness.

For how has this army of the unfit, whose existence is the most ghastly condemnation of our economic system, come into being? They are the creation of low wages, assisted by the miserable conditions under which the worst paid of the workers have lived for generations, and to this source of their production has been added irresponsible spending, extravagance, and consequently weakened moral fibre among the richer classes, which have turned out spendthrift ne'er-do-wells, who, in spite of all the artificial arrangements complained of by Huxley, have gradually sunk to the dregs. Both these sources of the output of unemployables might be stopped up, if the reform suggested in these pages were set to work and given time to bring forth its results. Probably it would take many generations before it would be possible altogether to weed out the unfortunate wights who are, in the expressive popular phrase, "born tired," and simply cannot face the daily effort of regular work. But

much might be done to stiffen their backbones and lessen their number if, instead of encouraging their production by underpaying our workers and making their lot difficult, and setting a stupid example of irresponsible and wasteful spending among the richer classes, we tried to bring home to all, the simple fact that by wrong spending we aggravate the economic evils of our present system, and that by wise spending we help to correct some of them.

As things are at present, the manner in which we spend our money is a matter in which we are swayed less by intelligence than by habit and convention and sheep-like mimicry of one another, tempered by weak-minded submission to the bullying of the advertiser.

"Although," says Dr. Hadley, "laws prescribing what a man may buy or sell have fallen into disuse, it must not be supposed that every man exercises his intelligence and pleasure to buy what will give him the most happiness. People are bound by custom where they have ceased to submit to law. A large part of the expense of most people is regulated, not by their own desires and demands, but by the demands of the public sentiment of the community about them. The standard of life of every family is fixed in large measure by social conventions. Few are intelligent enough to break away from those conventions, even where they are manifestly foolish. Although we have made much progress in the direction of economic freedom, it is a mistake to assume that the authority of custom in these matters is a thing of the past. With most men custom regulates their economic action more potently than any calculation of utility which they are able to make. Nor can we assume, as some

writers are prone to do, that such custom represents the average judgment of the community as to the things needed for the comfort and happiness of its members. It represents an average absence of judgment—a survival of habits which doubtless proved useful in times past, but which in many instances have entirely outlived their usefulness. The success of advertising shows how little intelligence is habitually exercised in these matters. A man does not generally use his nominal freedom to buy what he wants until someone comes and tells him in stentorian tones what he wants to buy. The authority of custom and tradition can only be overcome by the authority of drums and trumpets. It is a mistake to draw too fine-spun deductions as to the motives which guide buyers in their choice, when three-quarters of the buyers exercise no choice at all. It is not merely that people want things which hurt them, or which fail to do them the maximum good . . . but that they buy things, without knowing whether they want them or not, through sheer *vis inertiae*."³

This uncomfortable string of home-truths, dealt out to us all by a distinguished economist, would not hit us very hard if we were the only sufferers by the absurdities that he puts before us so clearly. If we choose to waste our own money at the bidding of convention and the advertiser, and if we could do so without hurting anybody else, we need only say with Puck:

Lord, what fools these mortals be!

and leave ourselves to the consequences of our folly. But the folly becomes tragedy when we have once grasped the fact that bad spending makes the

³ Hadley, *Economics*, chap. iii.

poor poorer, and it becomes necessary to look more closely into this question of the consumer's responsibility and to see whether something cannot be done to deliver him from the yoke of convention and from the paw of the advertising lion.

A sense of responsibility in the enjoyment of wealth is no new-fangled notion. In the Middle Ages the owner of land, then the form in which wealth was most commonly held, owned it only on condition that he put so many men, in proportion to his wealth, into the field when called on by his sovereign, and put himself at their head when they went into battle. This responsibility is long obsolete, and in the eye of the law and of custom a man who cuts off coupons or draws dividends and rents, or earns a big salary, may do as he pleases with his money. If he makes handsome contributions to charity, it is counted to him for righteousness, and rightly, since he is giving away what he believes, and his neighbors believe, to be his own. But, in fact, it is his own only in a very limited sense. If he has inherited it, he owes the peaceful possession of it to the protection given him by the rest of the community. If he earns it by his abilities, he owes it to exceptional training that his abilities have had, and to the neglect of the abilities of the greater part of the population, through lack of this training. The ease and comfort that he enjoys only exist because he is a member of a great whole, that works for him and works with him. If he spends his money in a manner that is harmful to the whole, he is not making a fair return to it for the benefits that it pours on him, and any expenditure that makes the lot of the poor harder is unquestionably harmful to the nation as a whole. Apart from any considera-

tions of humanity and equity, it is economically unsound that a large proportion of the population should be short of the necessities of life.

It is a commonplace that needs no proof that extravagance on the part both of nations and of individuals has increased very fast in the last few generations. The consequences, scarce capital and high prices, are before our eyes, "plain as way to parish church." High taxes prevent our saving and so does a so-called high standard of comfort, which generally means a high standard of ostentation, and of expenditure according to convention, instead of according to our wants.

"For at least half his expenditure," says Mr. Dibblee, "an ordinary individual does not know what he wants, and out of the other half for at least a half he does not get what he wants. . . . Half the furniture of any house is mere mimicry of other establishments, whose use is in display without beauty or comfort. Half the clothing of either children or adults is dictated by fashion and discarded before consumption. Half the wages of most of those who pay any for domestic service are for the performance of ceremony, useless, boring, and time-wasteful. Few of us are perhaps willing to admit this specifically in our own cases. . . . But it is easier to see the truth of such a generalization in the habits of others, particularly of the very rich, whose estates and stables, yachts, gardens and pictures are bought for them, kept going for them and regulated for them down to the last boot-button by a whole army of officials and experts, with only an occasional reference to any personal enjoyment which their owner may expect from them."⁴

⁴"The Laws of Supply and Demand," pp. 22, 24.

Let us leave the question of national extravagance to statesmen. Individual extravagance is a matter that each one of us can deal with himself, as far as he is guilty of it. As long as he believes that he only is a sufferer by it, and that if he outruns the constable he alone takes the consequences, he can go on merrily wasting the good things of the earth. But when once he has grasped the fact of the consumer's responsibility, he sees that it is one which he cannot evade. We are all consumers, and by our demand for goods and services we decide what goods and services shall be brought forth into the world's mart. If we abstain from, or reduce, our luxuries and frivolous consumption, we check the production of luxuries, and set free capital and energy for the production of necessities. At the same time, by checking our consumption of goods that we do not want we save more capital and so quicken the demand for labor, and so the workers are enabled to take advantage of the increased supply of necessities. When the workers are all supplied with necessities and poverty in its grimmest aspect has been driven off the face of the civilized earth, then it is likely enough that increased production may give us a surplus that we can use as we like. At present we consume luxuries at the expense of the ill-fed workers.

As we are all consumers so we all have this consumer's responsibility, and nearly all of us ignore it. Extravagance is rife in all classes. Thanks to the drums and trumpets of the advertiser, and the blatant publicity with which the luxurious exploits of the wealthy are nowadays chronicled, the habit of aping the expenditure of those better off than ourselves is pathetically general. The thriftlessness of

the poor, and the terribly bad use that they make of the pittance that civilized society hands out to them, are lamented by all who have worked among them. The marvels that the really destitute achieve in keeping body and soul together on next to nothing, are almost paralleled by the recklessness with which those who are rather better off take no thought for the morrow, and waste on betting or drink or cheap finery, money that is needed for their food and clothing. In their case it is natural enough. How many of us, who have been brought up differently, would act differently if we had to live their lives and face the problems that they deal with daily, and look forward to the future that is before them? But it is one of the lessons that the leaders of the workers have to teach, that they also have responsibility as consumers and that labor can never win a complete victory until it has conquered its own lack of thrift.

"When we remember," says Walker, "that the expenditure of the people of Great Britain, annually, for alcoholic beverages reaches the enormous sum of £180,000,000 . . . four-fifths, at least, of which is spent in a way that is not only without any beneficial effect, but is positively injurious, a large part of it going to the destruction of moral, intellectual, and physical power, we get a rude measure of the force which a wiser consumption of wealth might introduce into the economic life of that country."⁵

In this matter of the consumer's responsibility an enormous influence can be exercised by women. In the constituency of consumers they have

⁵ *Political Economy*, Part V, chap. iii. The Second Edition, from which I quote, was published in 1887. Our National drink bill for 1913 was 166½ millions.

already got a vote and a majority, and can use it today with overwhelming effect. Most of the world's spending is done by them, especially in the middle class, whose numbers and wealth make its action all-important. In many middle class households the man, the ostensible head of the family, is more or less in the position of the doctor described by Mr. Arnold Bennett in *Buried Alive*, whose "wife and two fully developed daughters spent too much on their frocks. For years, losing sight of the fact that he was an immortal soul, they had been treating him as a breakfast-in-the-slot machine: they put a breakfast in the slot, pushed a button of his waistcoat, and drew out banknotes." Household expenditure, that bulks so large in most of our budgets, is usually regulated almost entirely by the women of the family, who are the spending departments of the domestic Civil Service. If women could be brought to see, and act on, their responsibility as consumers, we should have made a long step forward towards a big reform. How far some of them are from this perception is shown by the example of a lady who lately achieved the honor of public mention in the newspapers by owning over a hundred nightgowns.

Summing our conclusions up, we may say that two evils now stand in the way of a better share for the workers in the good things of the earth. These are the dearness and scarcity of capital and the dearness and scarcity of food and raw materials. Both these evils every one of us can help to correct by spending less on luxuries, and living more sensible lives, in accordance with

a more genuine standard of comfort, based on our real wants instead of mimicry of the extravagance of our neighbors.

If we did so we should at the same time be working to do away with two important causes of discontent with the results of civilization. The discontent is due partly to our comparing our present comforts, not with those enjoyed by our forbears, but with those indulged in by our neighbors, and partly to an uncomfortable feeling that the existence of poverty in the midst of wealth is a disgrace to our civilization. Now we find that we can do something towards expelling both these causes of discontent by a single effort of mind, by seeing that members of the well-fed classes are better off than they have ever been before, if only they would recognize the fact and not always be asking for more. The keenness of the struggle among them is only due to a false ideal, which makes comfort consist in spending more than one's neighbor. If they would straighten out this twist in their minds, they would kill one cause of discontent at a blow, and by the more rational expenditure that would follow they would do something to kill the other; by checking the demand for luxuries, laying by more capital for industry, and helping the production of necessities. So we might do something towards making a world in which the poverty of those who do the hardest work should no longer be a reproach to all who enjoy its comforts. And we could do it ourselves, every one of us who have more than a living wage.

The Promotion of Thrift in America

By ALVIN JOHNSON

Editor, *New Republic*

SO long as we live under an economic system in which income is distributed on another basis than that of need, savings from private income or "thrift" will remain the most natural source of new capital for investment, the source involving the least hardship to individuals. So long as there are adverse chances of life against which adequate provision cannot be made through the insurance principle, every man who hopes to live in reasonable security will strive to build up reserves of purchasing power. As our economic life is now organized, and is likely to remain organized to a point in the future beyond the reach of reasonable calculations, the exercise of thrift is a public service and a private virtue. This has always been sufficiently clear to the few who have had the opportunity and taste to trace the operation of economic forces to their remote ramifications. The problem is: How to make the claims of thrift cogent to those who are not in the habit of abstract economic analysis, how to induce the maximum number not only to recognize these claims but to act upon them, against the solicitations of present indulgence and against the organized forces that through argument or suggestion support the counterclaims of the principle of free spending.

EDUCATION FOR THRIFT

Something may, I believe, be accomplished in this direction through education. The fallacy of the argument that spending stimulates trade

while saving kills it does not present logical difficulties beyond the control of the average child in the last years of the public school. If we could introduce the school savings bank generally and build up in connection with its administration a set of lessons explaining the use to which the savings are put, the source of their earnings, the possibilities of compound interest, we should no doubt in time add considerably to the number of habitual savers. There are also many directions in which the educational method might be applied to adults. It should not be impossible, for example, to interest labor organizations in the question whether the condition of the reserves of the individual members is not a mighty factor in determining the outcome of labor disputes. There is much evidence that could be assembled on this point. It would work toward establishing the rule of conduct: "Every union man should keep several months' reserves ahead."

SOCIAL POLICIES FOR STIMULATING THRIFT

Additional possibilities of bringing educational methods to bear upon the problem of extending the practice of thrift will readily occur to everyone. I do not linger over them because I believe that the habits of saving or spending, like most other personal habits, are rather refractory to logical demonstration and reasoned precept. Most men who have learned to practise thrift have been little influenced by theory and exhortation. They have

been much influenced by enviring conditions that make saving and investment as easy and natural as spending. The farmer who is yearning for a tractor is not in a state of mind essentially different from that of the suburbanite who is yearning for a touring car. Each cuts down expenses where he can to realize his desire. Each saves, for a while. But when they have realized their desires, the farmer has an instrument of production which, barring miscalculations, will add to his income by an amount equivalent to interest on the money he paid for it, together with a fair sum to offset wear and tear. The suburbanite has an instrument that adds no doubt to his happiness but rather helps him to spend his remaining income than to increase it. I hasten to disavow any intention of suggesting that the one application of purchasing power is more rational than the other. All I mean to imply is that differences in external conditions may have more to do with the practical exercise of thrift than inherent differences in temperament or differences in training, and that a social policy of stimulating thrift ought to look closely to these conditions. It should not expect the same measures to work with the factory hand or department store employe as may be expected to work with the farm laborer or share tenant. As in most other matters of social policy, we ought to attend first of all to classification.

Thrift in Agricultural Population

Let me offer, by way of suggestion only—for any one by taking thought can improve upon it—a rough classification of the American groups in which it would be desirable to stimulate thrift, with some opinions, also tentative, as to how thrift might ac-

tually be encouraged in each class. I shall begin with the agricultural population. Here we have (1) the independent farmer, with unencumbered holding; (2) the farmer owning subject to mortgage; (3) the tenant, ranging in status from (a) the more or less prosperous cash or share tenant of the North to (b) the Negro tenant, grading all the way down to peonage in the South; (4) the farm laborer.

As to the independent farmer, it may be thought that he is already sufficiently thrifty; nothing needs to be done to encourage him to save. That may in most instances be a sound view of the farmer's condition; but have you ever observed what happens in a typical farming community where mortgages are well cleared off and money begins to back up in the local banks? That is a fertile field for the promoter of speculative enterprises—oil, copper, or gold, Canadian wheat lands or orchard lands in Florida or California. And the fruit of most of this speculative activity is disillusionment and lessened incentive to save in future. What such a community could profitably absorb is safe and sound paper in local businesses—banks, elevators, mills—for a good yield, or the bonds of the federal, state and local governments, or of solid private corporations, for ready convertibility in case the usual sources of annual income fell away too seriously. The prosperous farmer won't have such investments; he wants sudden wealth through lucky speculation? Try him. Present to him the true merits of sound investments as seductively as the false merits of the unsound. That has never been done, so far as I know. Here is an opportunity for the educational method.

The farmer owning subject to mortgage usually has all his thrift instincts

harnessed to one purpose, paying off the mortgage. You would say that of course such a farmer would save all he could; his mortgage usually falls due within a very brief period—seldom more than five years—when he stands a chance of losing his equity unless he pays in full. But there is such a thing as putting so heavy a load behind an instinct that it balks altogether. It is astonishing how often the mortgagor comes up at the end of the period with a request for renewal of the whole loan. I have an impression, vague for want of any statistics for America that are to the point, that more net progress in payment is made in countries where such loans run from twenty to fifty years, with small compulsory instalments and no limit upon repayment at the option of the debtor. Practical men in America have a theory that the short term loan with drastic renewal possibilities makes for desperate struggles to save. That is a theory that wants fortification with facts, before it can override the reasonable psychological assumption that thrift grows best not under desperation but under reasonable ease and security.

We are experimenting, under the Federal Farm Loan act, with what I conceive to be the sounder principle; we need to push it much more energetically, and especially to use every effort to place farm loan bonds with the farmers themselves, so that as nearly automatically as possible the man who has extinguished his own debt may proceed by way of becoming an investor in loans to other farmers. That is a way of opening this field to non-speculative securities. It would have another effect of direct bearing upon the prospects of our next class, the tenants.

The Tenant Farmer. No democratic

American contemplates with satisfaction the idea of a permanent agricultural tenantry. As we would have it, the status of tenant ought to be a passing phase in the individual progress from farm hand to unencumbered owner. But at present there are two serious barriers to this progress, the one, the limited opportunity to secure long term purchase loans, the other, selling prices of land in excess of investment values. Much of our land is held at such a price that the interest a buyer would have to pay would greatly exceed the rent a tenant would pay. That is a heavy penalty upon the enterprise of establishing ownership. Its existence is usually explained by reference to the fact—which is not a fact—that land is sure to go up. A truer explanation, though a negative one, is that owing to our failure to develop among the agricultural population the habit of investing in sound securities, the very conception of investment values is wanting. A prosperous farmer with money to invest looks about for land to buy, as something certainly safe, not recognizing that there are security investments equally safe and much more convenient and productive. And so he contributes his share to hoisting the price of land above the reach of the man who must pay for it with what he can earn on it. The consequence is an inevitable discouragement to the tenant which makes for thriftlessness. The influence does not end with the tenant class, but sinks through it to the agricultural laborer, whose case, in the northern agricultural sections, is the case of the tenant, merely somewhat exaggerated. Sound education, not directly in thrift, but in investments and investment values, would appear to be the most promising

method of attaining the desired end.

The Negro share tenants in the South stand on a different footing. Ownership of land is for many of them a goal well beyond the horizon. Their immediate goal is the ownership of a working capital sufficient to deliver them from the crop lien and their consequent absolute dependence upon the local trader, often the landlord in another capacity. A condition more inimical to thrift could hardly be conceived. Apparently the first stage toward preparing the ground for thrift must be the creation of personal credit associations to break the tenants' dependence upon the local merchants; and consumers' coöperation to curb the merchants' prices. I am aware of the difficulties that such an enterprise would entail; of the resistance that would be offered by established interests that profit, apparently, from the dependence and degradation of the Negro tenantry. But the record of what intelligent racial leadership was able to accomplish in this direction in Poland and the Baltic Provinces, under conditions even less promising, makes the undertaking seem far from hopeless. It is sufficiently recognized in the South that a hopeless, thriftless, shiftless Negro tenantry is a wretched foundation for permanent prosperity, so that a serious attempt at a substantial improvement would command support even among the classes that gain immediate profit from the existing system.

Thrift Among Wage Earners

The Immigrant. In the case of the urban laborer there is as great need for classification as in the case of the farming classes. The same methods will not work with the salaried classes as will work with the wage earning classes.

The methods of thrift stimulation that might be effective with the American born laborer, usually occupying the better paid position, could not be expected to be so effective with the recent immigrant, uncertain in his strange surroundings and suspicious of all efforts that may be made to set him on the road to prosperity. The immigrant, as he lands, is not as a rule wanting in disposition toward thrift. He means to save all he can, as often as not with the intention—quite natural and legitimate—of carrying it away with him. He fears, and not without good reason, that somebody will try to euchre him out of any savings he may accumulate. What he asks of us is a place to store his savings in absolute security. We do offer him the services of our savings banks, in the greater part of the country as nearly absolutely secure as any rational and well informed person would desire. But the immigrant is not well informed, and suspects. He would trust the government, and the government meets his desires half way by providing postal savings banks. Only half way, however, for the government, out of a gentlemanly desire not to compete with any private enterprise, pays a rate so low that the immigrant feels robbed. European governments in their poverty pay better rates. Why could not America? America could and should pay as high a rate as the yield of government bonds, less the cost of administering the system. It could and should exert itself to place the government bond itself in the hands of the postal saver who has accumulated a sum sufficient to pay for it. Even a partial payment plan, in time of peace as in time of war, would be worth trying. A United States government bond in the hands of a recent immi-

grant would be a good start in Americanism and a conservation of thrift that is likely to profit us in the end, for most immigrants, whatever their original intention, stay with us.

The American Born Laborer. In dealing with the American born workman something other than facilities for saving is required. He knows sufficiently well of the existence of facilities that would suit him if he wanted to save. But he is suspicious too; suspicious of everything savoring of an attempt on the part of outsiders to improve and perhaps control him. A good rule would be to consult him first. It is impossible to consult him in his collectivity, but he has an abundance of shrewd leaders who know pretty exactly how he feels.

One thing that the American workingman will want to know before he will take the least interest in any movement designed to stimulate thrift is that it is not in intent or in tendency a scheme to make him more safe and sane, more content with his present lot, less disposed to organize and strike. There has been a vast amount of advice to labor from adherents of the orthodox economic school, to work and to save, and to endeavor to raise himself out of his class on the wings of his savings. All that has to be counteracted before any thrift movement will look to him like anything but insidious hostile propaganda. Then, as a practical fact, in every struggle over wages, in order to win popular support labor must win credit for the assertion that wages are insufficient for decent living and capital must demonstrate that wages are quite adequate. What would have been the effect upon public opinion in the recent coal dispute if the operators could have published the headline "Aggregate

bank deposits of 'exploited' miners \$40,000,000." That would be an average of \$100 apiece. Of course they ought to have an average of much more than that; any single miner with only so much faces a disquieting future, having one month's provisions ahead and three months' shut downs as common as the changes of the seasons. If they had an average of \$1,000 ahead it would be meagre enough as reasonable security. But how would \$400,000,000 or even \$40,000,000 look to you and me, members of a general public more prone to gasp at big aggregates than to reduce them to their true meaning? The coal miners can't afford to save—openly—so long as their wages need readjustment and so long as we of the general public do not see that the power to accumulate a reasonable reserve against the contingencies that beset every man's life is as natural a right as the right to bread and butter.

And then there is the history of attempts on the part of employers to fix the loyalty of their men through the investment of a few dollars in the business, forfeitable in case of strike or departure without cause; of attempts to plant employes in partial payment houses, not in practice salable in the event of retirement from the enterprise and from the neighborhood that lives by the enterprise. Not to pursue the inquiry farther, there is a great tangle of unhappy experience to be unravelled before you can say "thrift" to a trade-conscious American workman and not elicit a cold grin.

Yet, as I have pointed out before, there are cogent facts on the side of thrift. In a strike still pending, when funds ran low the strikers succeeded in tiding themselves over by hypothe-cating the Liberty bonds held by the collective membership. The differ-

ence between having bonds or not may prove to be the difference between victory and defeat. The general public may curse them for capitalists, if they win, but it would not bless them for anything if they lose. Now, I am not urging that a thrift campaign be inaugurated among trade union men to enable them to win any strikes they may undertake. I am urging that it is possible, through the men themselves, to work out a scheme by which the creation of individual reserves would appear clearly to be at least as much an element of strength as of weakness in industrial conflicts, and an element of strength alone in all the non-contentious mischances of life.

I have already exceeded the space allotted to me, and therefore I cannot trace out the altogether different case of the salaried employe of private enterprise or of government service, with present security and highly developed concern over the latter end of life, with which the average wage earner troubles himself little. His case suggests the

endowment principle as the worker's case suggested saving for a reserve and the farmer's case the accumulation of a permanent capital. But I have ranged widely enough for my purpose, anyway. That purpose was to suggest that thrift, as a national force, worthy of the most serious attention on the part of political science and statecraft, is not something simple, to be promoted by large simplicities of method, but something extremely complex to be handled successfully only after due consideration of the varying conditions under which men live and by methods judiciously adapted to those conditions. One thing all lives have in common: uncertainty; one maxim all men may take to heart: be prepared; and for the vast majority of us, thrift is essential to being prepared. So much may be inculcated in all the schools. But that is only elementary. We shall make real progress when we give due recognition to the necessity of applying the weft of diverse circumstance to the warp of common principle.

Appendix

What a saving of \$1.00 a week amounts to at interest compounded Quarterly

Years	3%	4%	5%	Years	3%	4%	5%
1	\$52.79	\$53.05	\$53.31	28	\$2,277.79	\$2,675.45	\$3,160.50
2	107.18	108.25	109.34	29	2,399.69	2,837.13	3,374.83
3	163.22	165.69	168.22	30	2,525.28	3,005.38	3,600.07
4	220.96	225.47	230.11				
5	280.45	287.67	295.14	31	\$2,654.68	\$3,180.46	\$3,836.79
6	341.75	352.40	363.49	32	2,788.01	3,362.65	4,085.57
7	404.91	419.76	435.32	33	2,925.39	3,552.23	4,347.02
8	469.98	489.85	510.81	34	3,066.93	3,749.51	4,621.80
9	537.03	562.78	590.15	35	3,212.76	3,954.81	4,910.57
10	606.11	638.68	673.53	36	3,363.03	4,168.44	5,214.05
				37	3,517.85	4,390.74	5,532.99
11	\$677.28	\$717.67	\$761.15	38	3,677.37	4,622.07	5,868.20
12	750.62	799.85	853.24	39	3,841.73	4,862.79	6,220.49
13	826.18	885.38	950.02	40	4,011.08	5,113.29	6,590.73
14	904.04	974.38	1,051.74				
15	984.25	1,066.99	1,158.63	41	\$4,185.57	\$5,375.95	\$6,979.84
16	1,066.90	1,163.36	1,270.97	42	4,365.35	5,645.21	7,388.77
17	1,152.06	1,263.56	1,389.03	43	4,550.58	5,927.47	7,818.54
18	1,239.80	1,368.00	1,513.11	44	4,741.43	6,221.20	8,270.20
19	1,330.20	1,476.60	1,643.51	45	4,938.07	6,526.85	8,744.88
20	1,423.35	1,589.60	1,780.55	46	5,140.68	6,844.92	9,243.74
				47	5,349.44	7,175.90	9,768.02
21	\$1,519.32	\$1,707.19	\$1,924.57	48	5,574.53	7,520.31	10,319.01
22	1,618.21	1,829.56	2,075.93	49	5,796.45	7,878.72	10,898.07
23	1,720.09	1,966.89	2,235.00	50	6,025.10	8,251.67	11,506.64
24	1,825.06	2,089.40	2,402.18				
25	1,933.22	2,227.28	2,577.87	75	\$14,652.69	\$24,546.45	\$42,429.97
26	2,044.66	2,370.77	2,762.52				
27	2,159.49	2,520.08	2,956.57	100	\$32,866.22	\$68,620.89	\$149,529.83

THE AMOUNT OF \$100.00

At Simple Interest

Years	3%	4%	5%
1	\$103.00	\$104.00	\$105.00
2	106.00	108.00	110.00
3	109.00	112.00	115.00
4	112.00	116.00	120.00
5	115.00	120.00	125.00
6	118.00	124.00	130.00
7	121.00	128.00	135.00
8	124.00	132.00	140.00
9	127.00	136.00	145.00
10	130.00	140.00	150.00
11	133.00	144.00	155.00
12	136.00	148.00	160.00
13	139.00	152.00	165.00
14	142.00	156.00	170.00
15	145.00	160.00	175.00
16	148.00	164.00	180.00
17	151.00	168.00	185.00
18	154.00	172.00	190.00
19	157.00	176.00	195.00
20	160.00	180.00	200.00

At Compound Interest Compounded Quarterly

Years	3%	4%	5%
1	\$103.03	\$104.06	\$105.10
2	106.16	108.29	110.45
3	109.38	112.68	116.08
4	112.70	117.26	121.99
5	116.11	122.02	128.20
6	119.64	126.97	134.74
7	123.27	132.13	141.60
8	127.01	137.49	148.81
9	130.86	143.08	156.39
10	134.84	148.89	164.36
11	138.93	154.93	172.74
12	143.14	161.22	181.54
13	147.48	167.77	190.78
14	151.96	174.58	200.50
15	156.57	181.67	210.72
16	161.32	189.05	221.45
17	166.21	196.72	232.74
18	171.26	204.71	244.59
19	176.45	213.02	257.05
20	181.80	221.67	270.15

21	163.00	184.00	205.00	187.32	230.67	283.91
22	166.00	188.00	210.00	193.00	240.04	298.38
23	169.00	192.00	215.00	198.86	249.79	313.58
24	172.00	196.00	220.00	204.89	259.93	329.55
25	175.00	200.00	225.00	211.11	270.48	346.34
26	178.00	204.00	230.00	217.51	281.46	363.99
27	181.00	208.00	235.00	224.11	292.89	382.53
28	184.00	212.00	240.00	230.91	304.79	402.02
29	187.00	216.00	245.00	237.92	317.16	422.50
30	190.00	220.00	250.00	245.14	330.04	444.02
31	193.00	224.00	255.00	252.57	343.44	466.64
32	196.00	228.00	260.00	260.24	357.39	490.42
33	199.00	232.00	265.00	268.13	371.90	515.40
34	202.00	236.00	270.00	276.27	387.00	541.66
35	205.00	240.00	275.00	284.65	402.71	569.25
36	208.00	244.00	280.00	293.28	419.06	598.25
37	211.00	248.00	285.00	302.18	436.08	628.73
38	214.00	252.00	290.00	311.35	453.78	660.76
39	217.00	256.00	295.00	320.79	472.20	694.43
40	220.00	260.00	300.00	330.53	491.37	729.81
41	223.00	264.00	305.00	340.55	511.32	767.00
42	226.00	268.00	310.00	350.89	532.08	806.07
43	229.00	272.00	315.00	361.53	553.69	847.14
44	232.00	276.00	320.00	372.50	576.16	890.31
45	235.00	280.00	325.00	383.80	599.56	935.67
46	238.00	284.00	330.00	395.45	623.90	983.34
47	241.00	288.00	335.00	407.44	649.23	1,033.44
48	244.00	292.00	340.00	419.81	675.59	1,086.10
49	247.00	296.00	345.00	432.54	703.02	1,141.43
50	250.00	300.00	350.00	445.67	731.60	1,199.52
75	325.00	400.00	475.00	940.85	1,978.83	4,154.40
100	400.00	500.00	600.00	1,986.20	5,352.36	14,388.34

What the New Savings Habit Has Done for the Banks

Issued by The War Loan Organization Fifth Federal Reserve District, Richmond, Va.

INCREASES IN DEPOSITS FROM DECEMBER 31, 1916, TO DECEMBER 31, 1918

State	No. of Banks		In Individual Demand Deposits		In Savings Deposits		In Total Deposits	
	In State	Report- ing	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
Maryland.....	278	242	\$50,968,000	31.04	\$33,059,000	20.89	\$97,140,000	26.21
District of Co- lumbia.....	45	42	42,320,000	66.95	11,324,000	47.46	59,041,000	59.79
Virginia.....	476	381	79,339,000	67.11	32,701,000	43.06	117,881,000	54.68
West Virginia..	285	227	32,523,000	49.95	9,149,000	18.56	42,833,000	36.19
North Carolina.	537	369	46,522,000	71.61	14,703,000	32.85	72,048,000	57.15
South Carolina.	426	302	33,109,000	83.05	26,695,000	73.60	50,007,000	59.67
Totals.....	2,047	1,563	\$284,781,000	55.25	\$127,631,000	32.87	\$438,950,000	43.33

COUNTIES SHOWING DECREASES IN DEPOSITS

State	No. of Counties		In Individual Demand Deposits		In Savings Deposits		In Total Deposits	
	In State	Report-ing	Number	Per Cent	Number	Per Cent	Number	Per Cent
Maryland.....	24 ¹	24 ¹	0	0	0	0	0	0
District of Columbia.....	...	...	0	0	0	0	0	0
Virginia.....	102 ²	89 ³	0	0	4	4.49	0	0
West Virginia..	49	49	0	0	12	24.49	0	0
North Carolina..	100	89	5	5.62	10	11.23	3	3.38
South Carolina..	46	46	0	0	0	0	0	0
Totals.....	321	297	5	1.68	26	8.75	3	1.01

COUNTIES SHOWING INCREASES IN DEPOSITS

State	No. of Counties		In Individual Demand Deposits		In Savings Deposits		In Total Deposits	
	In State	Report-ing	Number	Per Cent	Number	Per Cent	Number	Per Cent
Maryland.....	24 ¹	24 ¹	24	100.	24	100.	24	100.
District of Columbia.....	...	...	...	...	...	...	...	...
Virginia.....	102 ²	89 ³	89	100.	84	94.39	89	100.
West Virginia..	49	49	48	97.96	36	73.47	49	100.
North Carolina..	100	89	83	93.26	78	87.64	86	96.63
South Carolina..	46	46	46	100.	46	100.	46	100.
Totals.....	321	297	290 ⁴	97.65	268 ⁵	90.23	294	98.99

¹ Includes Baltimore City.² Includes Richmond City and Alexandria City.³ Eight counties in State have no banks.⁴ Two counties did not report Demand or Savings, but only total deposits.⁵ Three counties did not classify savings deposits in their reports.

SUMMARY

The growth of bank deposits in the Fifth Federal Reserve District during the war period was nothing less than remarkable.

Reports filed with the Federal Reserve Bank of Richmond by 1,563 banks out of the 2,047 in the district show that during the two calendar years 1917-1918:

Individual demand deposits increased
 \$284,781,000 or 55.25%
 Savings deposits increased
 126,631,000 or 32.87%
 Total deposits increased. 438,950,000 or 43.33%

These increases are the more remarkable in view of the fact that during practically the same period the people of this district, in addition to these savings and their liberal contributions to the Red Cross, Y. M. C. A., Knights of Columbus, United War Work, and many other special funds, all made in the face of a rapidly increasing cost of living—subscribed for, and to a large extent paid for out of their current earnings, \$850,000,000 worth of bonds of the first four Liberty Loans and about \$75,000,000 of

War Savings Stamps, not counting \$225,000,000 subscribed to the Victory Liberty Loan.

This growth in deposits was general throughout the district. The increases in individual demand deposits varied from 31.04 per cent in Maryland to 83.05 per cent in South Carolina; in savings deposits from 18.56 per cent in West Virginia to 73.60 per cent in South Carolina; and in total deposits from 26.21 per cent in Maryland to 59.67 per cent in South Carolina.

Within the States also the increases were very general. Of the 321 counties in the district (exclusive of the District of Columbia) reports were received from 297. Of these 297 counties 290 reported increases in demand deposits; 268 in savings deposits, and 294 total deposits.

It is especially notable that savings deposits increased 32.87 per cent.

There has been a very general increase in savings deposits throughout the country, despite the heavy purchases of Liberty Bonds. The two principal factors, perhaps, that contributed to this condition were the larger wages paid workers during the war period, and the savings habit which became far more general than ever before among the great mass of Americans. Many of them bought War Savings and Thrift Stamps periodically; many paid for Liberty Bonds on installment plans. Very generally those who bought these securities did not withdraw their money from the savings banks to pay for them, but saved from current earnings. Then, when these securities were paid for, the people, by force of their newly acquired habit of saving, continued to save and to deposit in the banks.

Appendix

Selected Bibliography of Books on Thrift and Savings

By GEORGE F. ZOOK

Professor of Modern European History, The Pennsylvania State College; recently with the United States Treasury Department

- Atwood, A. W. *How to Get Ahead*. Indianapolis, Bobbs-Merrill, 1917. 277 p. A popular treatment of individual and domestic economy and wise investments.
- Brown, M. W. *Development of Thrift*. New York, Macmillan, 1899. 222 p. The purpose of thrift and the various agencies for saving money.
- Carver, T. N. *War Thrift*. Carnegie Endowment for International Peace. New York, Oxford University Press, 1919. 68 p. The fundamental principles underlying the necessity for thrift in war; applicable also in peace.
- Chamberlain, A. H. and J. F. *Thrift and Conservation*. Philadelphia, Lippincott, 1919. 174 p. Simple and readable account which emphasizes the importance of conserving goods and materials.
- Ely, R. T., and others. *The Foundations of National Prosperity*. New York, Macmillan, 1917. 378 p. Comprehensive exposition of the necessity for the conservation of human and natural resources in every stage of human progress.
- Farmer, L. *A. B. C. of Home Saving*. New York, Harper, 1916. 113 p. Handbook of practical suggestions for economy in the home.
- Fowler, N. C., Jr. *How to Save Money*. Chicago, McClurg, 1913. 287 p. A popular treatise valuable, to those not familiar with financial operations, for its sound advice on the ways to save and invest money.
- Gregory, M. H. *Checking the Waste*. Indianapolis, Bobbs-Merrill, 1911. 318 p. A simple and practical résumé of the importance and usefulness of our natural resources.
- Hall, Bolton. *Thrift*. New York, Huebsch, 1916. 247 p. Popular discourses on modern methods of using personal and social resources most advantageously.
- Hamilton, J. H. *Savings and Savings Institutions*. New York, Macmillan, 1902. 436 p. A standard and comprehensive account of savings institutions in America.
- Harris, E. P., and others. *Coöperation, the Hope of the Consumer*. New York, Macmillan, 1918. Describes the success of coöperation, especially the Rochdale plan, in Europe and in America.
- Jackson, B. B., and others. *Thrift and Success*. New York, Century, 1919. 288 p. Suggestive and inspirational extracts for use in the elementary schools.
- Kemmerer, W. *Postal Savings*. Princeton, Princeton University Press, 1917. 176 p. Excellent and thorough account.
- King, W. I. *The Wealth and Income of the People of the United States*. New York, Macmillan, 1915. 278 p. The most comprehensive and valuable book on this subject.
- Kirkpatrick, E. A. *The Use of Money*. Indianapolis, Bobbs-Merrill, 1915.

- 226 p. Very suggestive book for the training of children in the use of money.
- Leeds, J. B. *Household Budget*. Germantown, Pa., The Author, 1917. 240 p. Actual divisions of time and money in running a household with suggestions for saving both. Emphasizes the productive labor of the housewife.
- MacGregor, T. D. *The Book of Thrift*. New York, Funk and Wagnalls, 1915. 349 p. Suggestive and practical chapters on the various aspects of the thrift movement.
- Marcossen, I. F. *How to Invest Your Savings*. Philadelphia, Altemus Company, 1907. 120 p. Short chapters on the various kinds of available investments.
- Marden, O. S. *Thrift*. New York, Crowell, 1918. 92 p. A popular discourse on personal economy for young people.
- Mead, E. E. *The Careful Investor*. Philadelphia, Lippincott, 1914. 289 p. Good advice as to how to invest in stocks and bonds.
- Nesbit, Florence. *Household Management*. New York, Russell Sage Foundation, 1918. 170 p. Problems that homemakers who live in crowded city quarters have to meet.
- Powell, G. H. *Coöperation in Agriculture*. New York, Macmillan, 1913. The value of coöperation to the farmer from a buying as well as a selling point of view.
- Pritchard, M. T. and Turkington, G. A. *Stories of Thrift for Young Americans*. New York, Scribner, 1915. 222 p. Stories suited to children in the upper grades.
- Rose, M. S. *Feeding the Family*. New York, Macmillan, 1916. 450 p. Handbook on food problems presented especially from the point of view of nutrition.
- Smiles, Samuel. *Thrift*. New York, Harper (1875). 404 p. A very suggestive book concerning the importance and necessity of personal economy and savings institution.
- Straus, S. W. (*The History of the Thrift Movement in America*. Philadelphia, Lippincott (in press). Chiefly devoted to the history of the recent thrift movement with special attention to the American Society for Thrift.
- Taber, C. W. *Business of the Household*. Philadelphia, Lippincott, 1918. 438 p. Treats the financial problems of the home, budgets, standards of expenditures, accounts and investments.
- Wellman, M. T. *Economy in Food*. Boston, Little, Brown, 1918. 36 p. Concerning economy in buying and storing food.
- Withers, Hartley. *Poverty and Waste*. New York, Dutton, 1916. 180 p. An excellent exposition of the economic principles underlying personal and public economy.

Index

- Agriculture: profits, 39; thrift, 234.
- AMERICAN FARMER'S NEED FOR CAPITAL.
Edward H. Thomson, 89-94.
- American Federation of Labor and Thrift,
51.
- AMERICA'S NEW CONCEPTION OF THRIFT.
Roy G. Blakey, 1-3.
- AN ANALYSIS OF THE NEED OF CAPITAL
FOR TRANSPORTATION IN THE UNITED
STATES. Holcombe Parkes, 83-8.
- Army supplies, disposal of, 132.
- ATWOOD, ALBERT W. Requisites of a
• Good Investment, 151-4.
- Balance of trade, 101.
- BALDENSPERGER, H. L. The Garbage
Pail, a National Thrift Barometer, 128-
35.
- Banking credit, extension of, 62; influence
on prices, 63.
- Banking theory of thrift, 44.
- Basis of prosperity, The, 27.
- BIBLIOGRAPHY. George F. Zook, 245-46.
- BLAKEY, ROY G. Foreword: America's
New Conception of Thrift, 1-3.
- Bonds: Civil War, 159; Mexican War, 163;
1812, 162; Spanish American War, 164.
- Budget Plan: for individuals, 13-8; for
nation, 65-70; limitations of, 69.
- Building and Loan Associations, 153, 173.
- Capital: accumulation of, 34, 39, 42, 59;
American farmer's need of, 89-94; de-
ferred replacements, 57; diversion of, 59;
field for investment, 87, 38; increase of,
31; levy on, 57, 107; needs of education,
• 71-82; needs for transportation, 83-8;
needs for foreign trade, 100-5; small sav-
ings, 169.
- CAPITAL NEEDS FOR AMERICAN INDUSTRIAL
DEVELOPMENT. Francis H. Sisson, 95-9.
- CAPITAL NEEDS FOR EDUCATION IN THE
UNITED STATES. David Snedden, 71-82.
- CAPITAL NEEDS OF FOREIGN TRADE.
Thomas W. Lamont, 100-5.
- Capital replacements: deferred, 57; made
through saving, 59.
- Capital wealth in United States, 33.
- CAROTHERS, W. H. Thrift in the School
Curriculum, 219-24.
- CARVER, T. N. The Relation of Thrift
to Nation Building, 4-8.
- Civil War bonds, 159.
- Coal conservation, the problem of, 113.
- COLLINS, CHARLES WALLACE. Govern-
mental Thrift through a National
Budget, 56-70.
- CONOVER, W. ROCKWOOD. Efficiency and
Thrift, 142-50.
- Conservation: of garbage, 122, 124; army
reclamation of, 128, 148; in institutions,
129; of human labor, 149.
- CONSUMER'S RESPONSIBILITY, THE. Hartley
Withers, 225-32.
- Consumption: of wealth, 28; thrift in, 47;
conservation in, 109; of food, 118-21,
123; goods, 28.
- COÖPERATIVE CREDIT INSTITUTIONS IN THE
UNITED STATES. James B. Morman,
172-182.
- Coöperative saving, in Belgium, 49, 195.
- Corporate savings and taxes, 40.
- Cost of food in relation to energy value, 126.
- Cost of living, 118.
- Coking our coal supply, 114.
- Credit Unions: 179; foreign trade, 100;
farm mortgages, 179.
- CUMMINGS, JOSEPH E. United States
Government Bonds as Investments, 158-
168.
- Cycles of prosperity and depression, 46.
- Demands which encourage saving, 15.
- DEVELOPMENT OF THRIFT FACILITIES, THE.
Milton Harrison, 168-71.
- Dividends, corporate, 39-40.
- DOWRIE, GEORGE W. Thrift and Business,
52-6.
- Economic dependence, causes of, 23.
- EFFICIENCY AND THRIFT—THE NEW DE-
MAND UPON THE INDUSTRIAL WORLD.
W. Rockwood Conover, 142-50.
- Efficiency: in conservation, 146; in organ-
ization, 143; in purchasing, 145; in spend-
ing, 13.
- Electrification of railroads, 116.
- Energy value of food, 127.
- Expenditure, 12; written account of, 13;
national, 57; for public education, 72;
government, 197.
- Expenditure and thrift, 12; factors affect-
ing, 30.
- Export balance, 102.

- Foreign trade: and credit, 100; future of, 102; ability of America to extend, 103.
- Facilities for saving, 168.
- Factors in capital accumulation, 42.
- Federal Farm Loan Act, 179.
- Federal Home Building Plan, 175.
- Fluctuations: in price level, 34; in value of money, 31, 61.
- Forms of capital needed by farmers, 92.
- FOREWORD, 1-3.
- Food expenditures, 14.
- Food, yearly consumption of, 118, 123.
- FOOD THRIFT. Raymond Pearl, 118-27.
- FREEDOM THROUGH THRIFT. William Mather Lewis, 9-10.
- FRIDAY, DAVID. Wealth, Income and Savings, 32-43.
- FUNCTION OF SALVAGE IN THE EDUCATION OF INDUSTRIAL WORKERS. George W. Sherman, 136-41.
- GARBAGE PAIL, A NATIONAL THRIFT BAROMETER, THE. H. L. Baldensperger, 128-35.
- GOVERNMENTAL THRIFT THROUGH A NATIONAL BUDGET. Charles Wallace Collins, 65-70.
- Government borrowing, 62.
- securities and savings accounts, 152; government bonds, 158-167, 194; securities for wage earners, 198.
- expenditures in England, 197.
- HANSEN, ALVIN H. Thrift and Labor, 44-9.
- Harmony of interest theory, 45.
- HARRISON, MILTON. The Development of Thrift Facilities, 168-71.
- Hazards of life and thrift, 22.
- Household operating expenses, 14.
- HOOVER, HERBERT. Memorandum on the Economic Situation, 106-11.
- HUEBNER, S. S. Life Insurance in Its Relation to Thrift, 183-9.
- Income, money and real, 11; national, 32, 36; corporate, 39, 40; farm capital and income, 90.
- Individual thrift, 26, 53.
- Individual expenditures, factors affecting, 30, 197.
- Industry, capital accumulations in, 39.
- Inflation: reduction of, 64; of currency, 109.
- Insurance, 26.
- INSURANCE OF THRIFT, THE. John A. Lapp, 21-6.
- Investments: for the masses, 151; wage earners, 236.
- Investment: and thrift, 17; capital, 95; war bonds, 164.
- market, the, 38.
- JOHNSON, ALVIN. The Promotion of Thrift in America, 233-8.
- Juvenile delinquency, 183.
- Labor: and purchase of war savings stamps, 50; economic change in, 108; conservation of, 149.
- Land values, increase of, 34.
- LAPP, JOHN A. The Insurance of Thrift, 21-6.
- LAMONT, THOMAS W. Capital Needs of Foreign Trade, 100-5.
- LEWIS, WILLIAM MATHER. Freedom Through Thrift, 9-10.
- LIFE INSURANCE IN ITS RELATION TO THRIFT. S. S. Huebner, 183-9.
- Life insurance, 152, 183-9, 206.
- Marketing clubs, 14.
- MCVEY, FRANK L. The Nation's Call for Thrift, 27-31.
- MEMORANDUM ON THE ECONOMIC SITUATION. Herbert Hoover, 106-11.
- Mexican War bonds, 163.
- MILLER, A. C. Thrift and the Financial Situation, 57-64.
- Money, value of, 31.
- MORMAN, JAMES B. Coöperative Credit Institution in the United States, 172-82.
- NATION'S CALL FOR SERVICE, THE. Frank L. McVey, 27-31.
- Nature of thrift, 5, 21, 52; of saving, 216.
- NATIONAL SAVING IN THE UNITED KINGDOM. William Schooling, 197-204.
- National farm loan associations, 181.
- financing: in the past, 65; and war, 68.
- income: 32; amount for, 1917, 36; amount of, 35; increase in money value of, 36.
- program for thrift, 49.
- savings: total volume of, 37; increase in, 37.
- thrift, the measure of, 32.
- wealth, 32; increase in value of, 33.
- ORGANIZED LABOR'S ATTITUDE TOWARD THE NATIONAL THRIFT MOVEMENT. Frank E. Wolfe, 50-51.

- PARKES, HOLCOMBE. An Analysis of the Need of Capital for Transportation in the United States, 83-8.
- PEARL, RAYMOND. Food Thrift, 118-27.
- People's banks of Italy, 194.
- Post office savings bank in England, 172.
- Post-war conditions, 52.
- Pressure of population on food supply, 30.
- PRICE, THEO. H. Speculation and the Small Investor, 155-7.
- Prices: change in level, 34; control of, 109; factors controlling, 61; influence of bank credit on, 63; saving and change in, 61.
- Production: effect of taxes on, 60; basis of prosperity, 27; decline in petroleum and oil, 112; effect of price control on, 109; improved routine in, 144; and saving, 61; thrift in, 206; waste in, 114.
- PROMOTION OF THRIFT IN AMERICA. Alvin Johnson, 233-8.
- PROMOTION AND PRACTICE OF THRIFT IN FOREIGN COUNTRIES. S. W. Straus, 190-6.
- PSYCHOLOGICAL NOTES ON THE MOTIVES FOR THRIFT. Edward L. Thorndike, 212-8.
- Public education: expenditures for, 73; achievements in, 74; expansion of, 75; for immigrants, 76; the support of, 79.
- Reconstruction, the part of industry in, 142.
- Reclamation of waste, 128, 148.
- Rehabilitation of Europe, 108.
- RELATION OF THRIFT TO NATION BUILDING, THE. T. N. Carver, 4-8.
- REQUISITES OF A GOOD INVESTMENT. Albert W. Atwood, 151-4.
- Savings: and insurance, 16; and life insurance, 186; and inflation, 64; basis of, 212; corporate, 40; farmers, 41; investment of, 170; life insurance, 186; loans from, 62; money, 168; national, 37; relation to prosperity and depression, 46; ——— to thrift, 15, 52, 168; ——— to business, 53; volume of for 1919, 43.
- table, 239.
- banks in England, 200.
- School savings bank, 170, 207; in France, 193.
- SCHOOLING, WILLIAM. National Saving in the United Kingdom, 197-204.
- SHERMAN, GEORGE W. The Function of Salvage in the Education of the Industrial Worker, 135-41.
- SISSON, FRANCIS H. Capital Needs for American Industrial Development, 95-9.
- SNEDDEN, DAVID. Capital Needs for Education in the United States, 71-82.
- Social custom and expenditure, 30.
- insurance, 16.
- policies for stimulating thrift, 233.
- Spanish American War bonds, 164.
- SPECULATION AND THE SMALL INVESTOR. Theodore H. Price, 155-7.
- Spending, relation to prosperity, 46.
- Standards of living, 48, 107.
- STRAUS, S. W. Promotion and Practice of Thrift in Foreign Countries, 190-6.
- Taxes: effect on production, 60; capital accumulation and, 69.
- THOMSON, EDWARD H. American Farmer's Need for Capital, 89-94.
- THORNDIKE, EDWARD L. Psychological Notes in the Motives for Thrift, 212-218.
- THRIFT AND LABOR. Alvin H. Hansen, 44-9.
- Transportation: capital deficit in, 85; development of facilities, 85; inadequacy of, 83; requirements for future, 84.
- True saving, 52.
- THRIFT AND BUSINESS. George W. Dowie, 52-6.
- THRIFT AND THE FINANCIAL SITUATION. A. C. Miller, 57-64.
- THRIFT IN THE SCHOOL CURRICULUM. W. H. Carothers, 219-24.
- THRIFT IN THE UNITED STATES. George F. Zook, 205-211.
- Thrift: banking theory of, 44; beginning of in Europe, 190; and conservation, 18; consumption, 47, 122; coöperative credit institutions, 173; in conduct of business, 54; expenditure, 12; harmony of interest theory, 45; hazards of life, 22; income, 11; investment, 17; in the army, 130; savings, 15.
- Unadjusted man, the, 131.
- UNITED STATES GOVERNMENT BONDS AS INVESTMENTS. Joseph E. Cummings, 158-68.
- Utilities, public, 110.
- Volume of savings for 1919, 43.
- War expenditures, magnitude of, 57.
- loans of 1812, 162.
- savings certificates in England, 198; stamps in U. S. 208.

- and national finance, 68.
- Waste: coöperative waste saving, 134; municipal problem, 133; possibilities of reclamation, 136; prevention of, in education, 80.
- WEALTH, INCOME AND SAVINGS. David Friday, 32-43.
- Wealth: capital wealth in U. S., 33; consumption of, 28; national, 32; production of, 172.
- Whitman plan for garbage conservation, 130.
- WHAT FUEL CONSERVATION MEANS TO AMERICA. Robert W. Woolley, 112-7.
- What the savings habit has done for the banks, 240-1.
- WITHERS, HARTLEY. The Consumer's Responsibility, 225-32.
- WOLFE, FRANK E. Organized Labor's Attitude toward the National Thrift Movement, 50-1.
- WOOLLEY, ROBERT W. What Fuel Conservation Means to America, 112-7.
- ZOOK, GEORGE F. Thrift in the United States, 205-11. Bibliography, 245-46.

BONDS AND THE BOND MARKET

The Annals

VOLUME LXXXVIII

MARCH, 1920

EDITOR: CLYDE L. KING

ASSISTANT EDITOR: C. H. CRENNAN

ASSOCIATE EDITOR: J. H. WILLITS

EDITORIAL COUNCIL: THOMAS CONWAY, JR., A. A. GIESIECKE, A. R. HATTON, AMOS S. HERSEY, E. M. HOPKINS, S. S. HUEBNER, CARL KELSEY, J. P. LICHTENBERGER, ROSWELL C. McCREA, E. M. PATTERSON, L. S. ROWE, HENRY SUZZALO, T. W. VAN METRE, F. D. WATSON

*Editor in Charge of
this Volume*

S. S. HUEBNER, Ph.D.

*Professor of Insurance and Commerce, University of Pennsylvania; Expert in Insurance
to the United States Shipping Board and the Committee of the
Merchant Marine and Fisheries*



*MI-V
1-223
Enation slip page 16
no plate*

THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE,
36TH STREET AND WOODLAND AVENUE,
PHILADELPHIA,
1920

Copyright, 1920, by
THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE
All rights reserved

EUROPEAN AGENTS

ENGLAND: P. S. King & Son, Ltd., 2 Great Smith St., Westminster, London, S. W.
FRANCE: L. Larose, Rue Soufflot, 22 Paris.
GERMANY: Mayer & Müller, 2 Prinz Louis Ferdinandstrasse, Berlin, N. W.
ITALY: Giornale Delgi Economisti, via Monte Savello, Palazzo Orsini, Rome.
SPAIN: E. Dossat, 9 Plaza de Santa Ana, Madrid.

The Editor desires to express his grateful appreciation to Mr. Erastus W. Bulkley, of Spencer Trask & Co., for his very helpful advice and generous aid in the planning of this volume and the selection and procurement of contributors. At all times the Editor was favored by Mr. Bulkley's hearty coöperation, and his aid and advice were frequently sought. Such value as this volume may have is in large measure due to his suggestions and assistance.

CONTENTS

BONDS AND THE BOND MARKET

Editor in Charge, S. S. HUEBNER, Professor of Insurance and Commerce, University of Pennsylvania; Expert in Insurance to the United States Shipping Board and the Committee on the Merchant Marine and Fisheries

	PAGE
<i>PART I—BOND FEATURES AND SERVICES OF THE INVESTMENT BANKER</i>	
FOREWORD.....	1
The Editor.	
CLASSIFICATION OF INVESTMENT BONDS.....	4
Hastings Lyon, Attorney-at-Law and Lecturer in Finance, Columbia University.	
TABLES OF BOND VALUES—THEORY AND USE.....	12
Montgomery Rollins, Boston, Mass.	
TREATMENT OF BONDS AT THE TIME OF REORGANIZATION.....	23
Arthur S. Dewing, Graduate School of Business Administration, Harvard University.	
THE WORK OF AN INVESTMENT BANKING HOUSE.....	34
Hastings Lyon, Attorney-at-Law and Lecturer at Columbia University.	
<i>PART II—AMERICAN GOVERNMENT AND CORPORATE BONDS</i>	
UNITED STATES GOVERNMENT BONDS.....	43
C. Frederick Childs, President, C. F. Childs & Co., New York and Chicago.	
MUNICIPAL BONDS.....	51
William R. Compton, President, William R. Compton Company, Investment Bankers; President, American Trust Company, St. Louis.	
RAILROAD BONDS.....	57
F. J. Lisman of F. J. Lisman & Company, New York City.	
PUBLIC SERVICE BONDS.....	63
H. M. Addinsell of Harris, Forbes & Company, Member of Public Utilities Securities Committee of the Investment Bankers Association.	
INDUSTRIAL BONDS.....	73
John Moody, President, Moody's Investors Service, New York City.	
REAL ESTATE BONDS AS AN INVESTMENT SECURITY.....	79
George A. Hurd, President, The Mortgage Bond Company, New York.	
FARE LOAN BONDS UNDER THE RURAL CREDITS ACT.....	95
Richard S. Stoye, Instructor in Finance, Wharton School, University of Pennsylvania.	
RECLAMATION OF SWAMP LANDS AND THE MODERN DRAINAGE BOND.....	102
J. Sheppard Smith, Vice-President, Mississippi Valley Trust Co., St. Louis, and Chairman, Reclamation Securities Committee, Investment Bankers Association of America, 1913-19.	
<i>PART III—FOREIGN GOVERNMENT AND CORPORATE BONDS</i>	
THE NEED FOR AMERICAN INVESTMENT IN FOREIGN SECURITIES.....	114
James Sheldon of Lee, Higginson & Co.	
FOREIGN GOVERNMENT BONDS.....	121
T. W. Lamont of J. P. Morgan & Co., New York City.	
FOREIGN CORPORATE BONDS IN THE AMERICAN MARKET.....	130
Arthur J. Rosenthal of Bernhard, Scholle & Company, New York City.	

CANADIAN BONDS.....	139
G. A. Macpherson of A. E. Ames & Company, Toronto and Montreal.	
LATIN AMERICAN SECURITIES.....	144
W. S. Kies, formerly Vice-President of the National City Bank of New York and of the American International Corporation. Now of Aldred & Company.	
<i>PART IV—LEADING PROBLEMS OF CURRENT INTEREST</i>	
THE EFFECT OF TAXATION ON SECURITIES.....	156
Roy C. Osgood, Vice-President, First Trust and Savings Bank, Chicago, and Chairman, Taxation Committee of the Investment Bankers Association of America.	
THE INSTALLMENT PLAN AND THE BABY BOND.....	169
Robert Riegel, Assistant Professor of Insurance, Wharton School of Finance and Commerce, University of Pennsylvania.	
"BLUE SKY" LAWS.....	177
Robert R. Reed of Reed, Dougherty & Hoyt, New York City.	
<i>PART V—BOND PRICES</i>	
HISTORY OF BOND PRICES.....	188
Hermann F. Arens and James R. Bancroft of the Babson Institute.	
CAUSES EFFECTING THE VALUE OF BONDS.....	200
Hermann F. Arens and James R. Bancroft of the Babson Institute.	
BOOK DEPARTMENT.....	213
REPORT OF THE BOARD OF DIRECTORS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.....	215
INDEX.....	220

FOREWORD

THIS volume deals with one of the great agencies for thrift and investment. For the great mass of people with dependents, life insurance should be the first type of security to be purchased. Where a dependent family is at stake it is the height of folly to urge investment in other directions, and it is quite beside the point to offer laborious explanations of the relative merits of various classes of bonds and other types of investment. The first duty of every man is to protect his household against want in case of premature death, and this can be done only through the purchase of an adequate amount of life insurance. As is well known, life insurance offers a convenient and safe method of accumulating a savings fund at a very fair rate of return. But the greatest purpose of life insurance is to protect. It takes time to save and, where dependents must be protected, life insurance alone guarantees the accumulation of a competency against the contingency of the saving period being cut short by an untimely death. The great mass of people live only within the life insurance stage and are removed by thousands of dollars from the point where they can judiciously become direct investors along other lines. But, for those who have emerged from the life insurance stage, good bonds constitute the most favorable type of investment, all advantages being considered such as safety, yield, convertibility, stability of price, convenience of handling and suitability for quick borrowing. Even the billions of sav-

ings of those living in the life insurance stage, it should be remembered, are chiefly invested in bonds, although indirectly, since this type of security constitutes the major portion of the investments of life insurance companies.

The accumulation of a decent competency should be regarded as a duty and an act of wisdom. Yet present practices in attempting to attain this desirable goal remind one of *Æsop's* fable of the race between the tortoise and the hare. The hare relied upon the speedy method of running the race, expected to leap to victory, and accordingly saw fit, somewhere on the race-course to take a nap. The tortoise, on the contrary, relied upon his steady, persistent and unspectacular gait, and won the race. And such is the case today in the race for a decent competency. Many seek to win by the quick method. They expect to leap to success. They assume highly speculative hazards, particularly in stocks, without possessing either the financial or educational equipment, and, as a rule, are put to sleep somewhere along the course. Others adopt the slow method. They save their surplus earnings patiently and persistently, invest the same in gilt-edged bonds, are satisfied with a fair interest return, allow compound interest to work its wonders, and win the race. When the hare of *Æsop's* fable awoke from his sleep he realized his defeat and lost all interest in the race. When the incompetent speculator awakes from his folly he finds his

resources gone, and along with them all hope and all ambition to try once more. Conscious of his folly and crushed by the bitterness of disappointment, he almost invariably loses all interest in the goal he strove to reach and, financially speaking, goes to sleep permanently.

The difficulty of accumulating and retaining a competency is well illustrated by the fact that only one out of every ten adults in this country leaves a decent estate at the time of death, and that of those who acquire a reasonable competency by the time age 50 is reached one-half again lose the same before death. Much of this miserable showing is traceable to two very prevalent practices on the part of the general public. The first relates to the purchase of stocks, often of a very hazardous and questionable nature, by those who are not at all equipped to judge the merits of the proposition, and, in fact, are ignorant of the fundamental nature of that type of security. Bonds are credit instruments and, with few exceptions, contain a definite promise as to principal and interest. Stock certificates, on the contrary, promise nothing at all. They merely constitute an evidence of ownership, a certification of the holder's privilege to share in risk, *i.e.*, to participate in the varying fortunes of the business enterprise.

Few facts deserve to be impressed more upon the investing public than this fundamental distinction between bonds and stocks. Common observation shows that the American people are afflicted with a mania for speculation and gambling in the security market. They seem callous to risk. The words "preferred" and "guaranteed"

and the "promise" of fancy dividends serve, as probably nowhere else, as an irresistible attraction. Were this not the case there would soon be an end to the present wholesale tendency to fill the principal newspapers and flood the mails with alluring advertisements and prospectuses. So serious has the problem become everywhere that the nation has been subjected to an epidemic of "blue sky" legislation of one kind or another designed to protect the public against their own folly (see the article on "*Blue Sky*" Laws).

The second unwelcome tendency relates to the very general practice of the investing public to "go it alone," instead of seeking the advice of conservative and well established investment concerns. The average investor is not in a position to base his selection of a bond upon personal examination. Nor is it practicable for the average investor to spread his investments so widely as to have the law of average render negligible a serious loss on any particular security. The wisest course, therefore, is to invest only in such securities as are recommended by responsible investment houses (see article on *The Work of an Investment Banking House*). Numerous such concerns exist throughout the United States. They are specialists in the bond business and possess the experience and training necessary for a proper investigation and selection of securities. Their greatest trade asset is their past record for good judgment. Such concerns must operate on the theory that sound advice to clients is the surest road to large business, while faulty recommendation is a quick and certain way to failure.

Avoidance of the aforementioned deplorable practices, now so deeply ingrained in the American psychology, can be accomplished only gradually, and reliance for a change must be placed largely upon education. This volume, it is hoped, will be of service in this respect. In one sense it is a successor to the volume on *Bonds as Investment Securities* issued by the American Academy thirteen years ago which enjoyed a wide circulation and served as a basis for numerous educational courses. In fact, it was the continued demand for this volume, even after such considerable lapse of time, that suggested the desirability of issuing a new and up-to-date volume on the subject. The changes wrought by time in the bond market have been so numerous and important that all

of the articles in the present volume, except two, are essentially new. One of these exceptions deals with principles which are unchangeable, and the other, although retaining its original form, has been materially revised to meet the changes of the past decade. The purpose of the volume is to explain the bond market from a fourfold standpoint, viz., (1) the features of bonds and the services of the investment banker, (2) present problems and tendencies associated with the various types of American and foreign government and corporate bonds, (3) leading problems of current interest to the bond market in general and (4) the record of bond prices and the factors that govern such prices.

S. S. HUEBNER.

Classification of Investment Bonds

By HASTINGS LYON

Attorney-at-Law, Lecturer in Finance, Columbia University

NO definition of an investment bond is broad enough to include every instrument ordinarily included in that phrase short of the general statement that it is a formal promise to pay expressed in a written instrument. Even to say that it is an instrument containing a promise to repay would be to give too narrow a definition, for the promise of a bond of the nature of a government perpetual annuity does not involve any stipulation for the repayment of principal. We have, then, to consider the classification of formal instruments containing promises to pay given as evidences of the commitment of investment funds to the promisor.

CLASSIFICATION BASED ON MEANS OF PAYMENT

No Compulsory Payment

Government Bonds of a Sovereign Power.—Our first broad classification is between those promises on which no compulsion can be brought to bear in the event of failure to fulfill the promise in accordance with its terms, and those on which compulsion can be brought to bear. This first broad general classification could be expressed in another way as stating the difference between bonds expressing the promise of a government to pay and the statement of the obligation of other promisors. Note the change in the phrase from the *promise* of a government to the *obligation of other promisors*. This change in the phrase is

necessary because the promise of a government to pay is not in a legal sense an obligation. This fact arises out of the nature of sovereignty. Since the sovereign state is the law enforcing power and the force back of all legal mandates lies in the government, obviously, no legal compulsion can be brought to bear on the government. That one cannot sue the sovereign is a principle inherent in the very nature of law. So the fulfillment of the promise of a government rests on good faith. It should be kept in mind in this connection of government bonds that the several states of the Union are sovereign powers, retaining all the aspects of sovereignty not expressly surrendered by the constitution to the federal government. The several states did not make any surrender to the federal government that enables an individual to sue one of the sovereign states of the Union. Therefore, no individual can bring compulsion to bear on a state of the United States to make it fulfill a promise to pay. The several states did surrender their sovereignty so far, however, as to enable sister states of the Union to bring an action against them in the federal courts. One of the most notable of such actions is the suit of the state of Virginia against the state of West Virginia to compel the latter to carry out its undertaking to pay its share of the pre-Civil War debt of the state of Virginia from which the state of West Virginia separated at the time

of the Civil War. This limitation of sovereignty is so slight, however, that bonds of the states of the United States may be considered government bonds for all practical purposes. Indeed, they are absolutely such so far as individuals are concerned.

Compulsory Payments

Municipal Bonds (Government Agencies).—Note, however, that this distinction between promises to pay of a sovereign power and other promises to pay for the fulfillment of which legal compulsion can be brought to bear, is not the same thing as promises to pay for which the means of fulfillment rests in the taxing power. This difference raises the distinction between government bonds and the bonds issued by government agencies to which the sovereign power has entrusted some part of its governmental functions. These agencies go under the broad general name of municipalities and their bonds are broadly termed municipal bonds. Since the municipalities are created by the sovereign, it follows, in the nature of the case, that the sovereign can bring its compulsion to bear on them in any direction it sees fit. Municipalities have a right to issue bonds only by virtue of the authority given to them by the sovereign. When the sovereign has given authority it will compel the performance of the promise of the municipality to pay made within the scope of the authority. The fact that the promise to pay must be within the scope of the authority given makes especially important the usual investigation of the validity of municipal bonds by legal experts on behalf of the purchaser.

The payment of municipal bonds

rests on the taxing power. This is true even of bonds issued to provide the funds for revenue producing municipal undertakings, as water works, which are commonly revenue producing municipal undertakings, or the less common municipally owned lighting plants, street railways, and other enterprises which municipalities sometimes engage in. The payment of interest and principal of bonds issued for these purposes is not limited to the earnings and assets of the particular enterprise but is a general municipal obligation. When we say that the fulfillment of the promise to pay rests on the taxing power we mean that it rests on the power of the municipality to appropriate for public purposes such part of the privately owned wealth as may be necessary. The sovereign through its courts will compel the municipality to make such an appropriation by the usual methods of taxation to fulfill the municipal promise to pay expressed in its bonds.

Municipal bonds require no sub-classification other than that which arises naturally from the classes of issuing municipalities. In the word municipality we here include any agency to which the sovereign delegates any governmental powers, including counties, cities, townships, school and any other municipal districts.

Special Assessment Bonds.—One class of bonds lies between municipal obligations and the promises to pay of private obligors, this is the special assessment bond. Though issued by a municipality the resources out of which payment is to be made are limited to particular assets. Usually they are issued to provide the funds for

local improvements, as sewers or sidewalks. The property benefited becomes liable for all or part of the cost of the improvement. The municipality undertakes only to levy the assessments which are to provide the fund for repayment. If the value of the property benefited and liable should not be sufficient to meet the obligation the municipality would not have any further liability. A deficiency in the assets out of which payment is to be made might well happen in the case of over-improvement resulting from too sanguine expectation of the growth of population. These true special assessment bonds are to be distinguished from bonds on which the municipality is generally liable issued by it to refund its proportion of the cost of a local improvement which is not especially assessed against the benefited property.

Corporation Bonds.—When we think of investment bonds of private obligors in distinction from government and municipal bonds we usually have corporation bonds in mind. The broader distinction, however, would be the one indicated, namely, that between a public promise to pay resting on the taxing power, and a private obligation resting for its fulfillment on the value of privately owned property and the earning power of privately conducted business. Such an obligation can just as well, and even more simply, be created by a natural person as by a corporation, which is an artificial person. Indeed, in various jurisdictions a bond is the ordinary form of mortgage obligation, and an investment in ordinary individual mortgages is an investment in bonds. In attempting this classification of investment bonds, however, we are consider-

ing those bonds which have a fungible quality, that is, which represent equal parts of the same general obligation to pay. They are, as we say, bonds of an "issue." Such bonds are more commonly issued by corporations.

CLASSIFICATION BASED ON SECURITY

Our first broad classification would draw the line of distinction between secured and unsecured bonds. A secured bond, besides representing the general obligation to pay, has specifically pledged to the fulfillment of the obligation some particular asset or assets. An unsecured bond represents simply the general obligation to pay, and the holder would have recourse only to assets not otherwise specifically pledged. Unsecured bonds are generally called "debentures" in this country, from the Latin *debere*, to owe. In Great Britain and Canada, however, the word debenture is generic and includes both secured and unsecured bonds.

Secured Bonds—Direct Access to Assets of the Obligator

Tangible Property—Mortgage Bonds.—Secured bonds may be classified according to the assets pledged. The assets may be intangible, as the stocks or bonds of other corporations, or may be tangible personal property or may be real estate. Let us take the last first. The ordinary way of giving the security of real property is by mortgage, and bonds secured on real estate are generally called mortgage bonds. If they represent the first claim against real estate they are first mortgage bonds. Bonds representing a second or more remote claim against real estate are seldom called second mort-

gage bonds, or third or fourth, as the case may be. Some euphemy is ordinarily used to designate them, taken from some other aspect of the security, as "general mortgage bonds." It should also be kept in mind that a bond may be secured by a first mortgage on some particular asset but have the security only of a second or even more junior mortgage on other assets. If it has the security of a first mortgage as to any asset it is entitled to be called a first mortgage bond. Usually in that case the juniority of the security as to other assets is indicated by some further appellation, as "first and general mortgage bond." In relation to their priority of claims against assets, bonds are called "senior" and "junior."

Corporation Bonds.—Corporation bonds are usually secured by the mortgage of the tangible personal property of the corporation as well as by real estate. That is, the mortgage securing the bonds is a chattel mortgage as well as a real property mortgage. This fact arises out of the nature of the situation. The real property, including the improvements on it, as factory buildings, or whatever they may be, derives its income producing value through its use as part of a productive enterprise. For his real protection the investor in the bonds of the corporation needs to be in a position to get the benefit of the continuous productive value of the property, and to do this must have all the chattels that go with the business as well as the real estate. So, regularly, the bond is given the same priority of claim against the tangible personal property used in the business that it has against the real estate.

Intangible Property—Collateral

Bonds.—Bonds secured only by the pledge of intangible personal property, as by bonds and stocks, are not mortgage bonds. That is, a mortgage applies only to tangible property, chattels or real estate. The security of stocks and bonds is given by way of pledge and made effective usually by depositing the pledged securities with a trustee to hold under the terms of the trust indenture expressing the pledge. Bonds so secured are called "collateral bonds."

Bonds may be secured by both the deposit of collateral and by mortgage on real estate and chattels. Usually if there is a mortgage the bond takes its name from that and the deposit of the collateral is regarded as incidental and in the nature of additional security. In short, from the aspect of security, very little can be taken for granted from the name of the bond. The investor needs to investigate in each case and find precisely what security has been given.

It should be remarked that frequently all the mortgage bonds of a given issue are deposited as collateral security for bonds of another issue. In that case the bonds of the second issue have, in effect, the same mortgage claim as the deposited bonds. This situation frequently arises through a parent corporation taking all the bonds of an issue of a subsidiary and pledging them as collateral security for an issue of bonds of the parent company. In this way the parent company is able to borrow on the security of its general credit and give at the same time virtually a mortgage security on the assets of the subsidiary. Sometimes, however, a company may pledge its own bonds as collateral security for an

issue of its own. At first thought this may seem a complication without an advantage. Why should not the corporation sell the bonds of the original issue? This situation ordinarily arises out of a change in the money market after the original issue was authorized. Interest rates have gone up. The original bonds were authorized to run for a long period. To sell them on the terms that may now be obtained would be to impose on the corporation for the entire term of the bonds the burden of the money rates now existing. If the management of the corporation believes that interest rates are going down, the simplest solution of the financing problem immediately before it is to take the authorized long term bonds and pledge them as collateral security for bonds with a shorter term, maturing at such a time as the management believes will be more favorable for the issue of long term securities. The management believes that when the collateral bonds mature it will be able to sell advantageously the long term bonds deposited.

Ordinarily, in the case of individual obligors, only specific assets existing at the time the mortgage is given come under the lien of the mortgage. Corporation mortgages contain a stipulation that the mortgage is given not only on the property owned by the corporation at the time but also on any property the corporation may acquire in the future. Such an agreement is termed a future acquired property mortgage. Such future acquired property mortgages have led to the formation of subsidiary corporations in order that new assets acquired may be mortgaged not subject to the lien of the parent company which uses bonds

of the subsidiary as collateral for an issue of its own.

Parent companies also guarantee bonds of subsidiaries. Sometimes such a guarantee is given as part of the payment for a lease. It is these two situations which most frequently give rise to guaranteed bonds. It is desirable from the viewpoint of the investor that the guarantee be endorsed on the guaranteed security.

Our discussion of corporation bonds has indicated those for the payment of which the bondholder may reach the assets of the obligor. A special class of bonds contain a stipulation that interest is payable only out of income. Such bonds are called income bonds.

CLASSIFICATION ON AUTHORITY OF THE ISSUE

So far our classification of bonds has been from the primary viewpoint of the obligation, that is, whether the promise to pay is enforceable or not, and the security, that is, whether the bondholder relies on the general credit of the obligor or has in addition a direct claim on specific assets that would come prior to the rights of general creditors. But aspects other than that of security lead to other classifications. One classification can be made on the basis of the authority to issue.

Open and Closed Mortgage Bonds

This may be considered really a sub-classification of mortgage bonds. It is necessary that stockholders authorize the creation of a mortgage. Directors of a corporation may not voluntarily cease to do the business contemplated by the stockholders when they committed their funds to the

enterprise, and may not voluntarily do that, the natural result of which might be the ceasing to do business. Therefore, directors may not sell all the assets of a corporation, converting into cash its means of continuing business. Ordinarily the authorization of a bare majority of stockholders would not be sufficient to effect a sale of all the assets of a corporation. Statutes usually declare the size of the majority required. To mortgage the property might result, through foreclosure, in a corporation being deprived of the means of doing business. A mortgage is in itself a conveyance. To be sure the same result might follow any indebtedness in some other manner, but the possible result of the mortgage is direct and obvious. Therefore, stockholders' authority is required to mortgage and to create a debt secured by mortgage. The stockholders authorize the amount of the mortgage debt. If bonds representing the entire authorized debt are issued the mortgage is said to be "closed," and the bonds are closed mortgage bonds. If bonds are not issued up to the entire mortgage debt authorized the mortgage is open and the bonds are open mortgage bonds, but more commonly spoken of as "authorized and unissued bonds."

Refunding Bonds.—If a restriction is placed on the issuance of all or part of the authorized and unissued bonds, limiting their issuance to the one purpose of providing funds for the payment of other, and usually senior bonds, the issue is called a refunding bond issue. The usual provision is that the authorized and unissued bonds, or such part of them as are reserved for this purpose, may be certified by the trustee only on the receipt of an equal

number of bonds of the issue which is to be refunded.

CLASSIFICATION ACCORDING TO MATURITY

Another basis of classification of bonds lies in the maturity and in the provisions, if any, for supplying funds with which to make payment at maturity. Bonds may be perpetual, that is, without any due date. This is different from a demand obligation, for which, in a sense, it may be said that every day is a due day.

Perpetual

Government bonds are frequently perpetual. In this country bonds are seldom a perpetual security. Still there are a number of corporation issues in this country without a due date. Bonds may be "redeemable," that is, the issuer may reserve the right to pay before the date on which the issuer is obliged to pay. Ordinarily the redemption right is exercisable only in the payment of a premium, that is, some stated amount above the obligation to pay at maturity. Some specific provision may be made for the accumulation of a fund with which to meet the obligation to pay at maturity. Such a fund is termed a "sinking fund" and the bonds are called sinking fund bonds. A sinking fund provision equalizes or distributes the burden of the debt.

Serial Bonds

A distribution of the burden of the debt may be provided by making an issue of bonds fall due, not all on the same date, but part each year through the entire period, or part of the period covered by the debt. Such bonds are called serial bonds.

Convertible Bonds

Perhaps the conversion feature of bonds may be considered most appropriately at this point. Sometimes bonds contain a stipulation giving the holder the option to convert into a junior security, usually stock of the corporation, under the stated condition of time and price. This conversion stipulation may be thought of in close connection with the classification according to maturity because, in a sense, an exercise of the option to convert is an acceleration of maturity in that it brings the particular obligation to an end. The conversion stipulation contains the condition of the time within which the option may be exercised. That is, the right to convert may begin at once or at some later date and continue till the due date of the bond, or the right may terminate earlier than the due date. The time limits are explicit and readily understandable. More difficulty sometimes arises over the price conditions. If the exchange is at par for par, that is, a thousand dollar bond may be exchanged for ten shares of stock of the par value of one hundred dollars a share, the situation is clear enough. But the stipulation is sometimes that the bond may be converted into stock at, say, 150. This means that it would require fifteen thousand dollar bonds to effect an exchange for one hundred shares of stock at the par value of one hundred dollars a share. The stock is paid for, so to speak, at 150 with the debt considered as worth the full amount of the obligation. Sometimes the option may be more complex, as that the bonds may be converted at 75 into stock at 150. This means that the bonds are worth only 75 cents on

the dollar of the obligation to convert into stock at a price of 150. This particular ratio could be expressed by stating that the bonds could be converted (at par) into stock at 200. A conversion stipulation has been made in a number of government bonds issued during the war to the effect that the particular issue may be converted into another issue or issues. Of course, this is not a conversion into a junior security as we have stated of corporation bonds, as there is, generally speaking, no seniority or juniority of government bonds, but simply a change from one government promise into another with different terms.

CLASSIFICATION AS TO PAYMENT OF INTEREST

Bonds are further classified with respect to the manner of transfer and interest payment into registered and coupon bonds. The creditor whose claim is represented by a registered bond can transfer his right to receive payment only by an entry on the books of the corporation. Payment of interest is made by check to the registered owner mailed to the registered address. Since title can pass only by change of registration such bonds are not negotiable.

CLASSIFICATION ACCORDING TO TAX POSITION

A special stipulation frequently contained in bonds has been given such importance through the course of federal income tax legislation as to have given another basis of classification for bonds. Agreements have frequently been inserted in bonds by which the obligor has promised to pay any tax which the obligor may be

required to retain or withhold from the obligee. These agreements were doubtless inserted for many years without very much thought of the effect or expectation that the obligor would, in fact, ever be called on to suffer any loss on account of them. Neither did the investor pay any attention to them or pay a dollar more for the bonds on account of them. Years before there was any thought of an income tax with a "collection at the source" feature the writer came in contact with the British income tax with its "collection at the source" features, and called attention to the dangers of these tax covenants to the obligor. When our "collection at the source" statute was passed these tax covenants blazed with importance. When "collection at the source" was abandoned prices of bonds had become so affected by the presence of the tax covenant that it was deemed expedient to retain the "withholding at the source" feature in relation to bonds. So on the basis of the federal income tax, bonds are known as "tax covenant" and "non tax covenant" bonds.

The laws of our multiplicity of jurisdictions vary widely in respect to the taxation of securities, and bonds not subject to taxation in given jurisdiction are known as tax exempt in that jurisdiction and those subject to taxation are called taxable in the jurisdiction.

Classification depending on the promise to pay

No compulsion

Government bonds, *i.e.* of sovereign powers, including sovereign states or federations

Compulsion

Municipal bonds (government agencies)

Private bonds—*i.e.* of individual, associated and corporation obligors

Classification depending on the means of payment

Bonds depending on the taxing power

Government

Municipal

Bonds for the payment of which direct access may be had to assets of the obligor

Private bonds that contain absolute promise to pay

Bonds for the payment of which, so far as interest is concerned, access may be had to earning power only

Income bonds

Classification according to security

Debentures

No specific security but depending on the general credit of the obligor enforceable through judgment and levy of execution

Mortgage bonds

Bonds secured by mortgage on tangible assets

Collateral bonds

Bonds secured by the pledge of intangibles—as stocks and bonds

Classification according to the element of time in relation to the specific security

Future acquired property mortgage bonds

Specific mortgage bonds (*i.e.* relating only to assets existing and mortgaged at the time the mortgage is created)

Classification according to authority to issue

Closed mortgage bonds

Open mortgage bonds

Refunding bonds

Classification according to provision for maturity

Perpetual

Serial

Sinking fund

Convertible

Redeemable

Optional (*i.e.* redeemable after a certain time)

Classification according to manner of transfer and payment of interest

Registered

Coupon

Classification according to tax position

Federal Taxation

Taxable

Tax exempt

Tax covenant

Non tax covenant

State taxation

Taxable

Tax exempt

Tables of Bond Values—Theory and Use

By MONTGOMERY ROLLINS¹

Boston, Mass.

THIS article assumes that the material presented is to be referred to by the average practical dealer or investor in bonds, who seeks results for easy use and application. There are more exhaustive treatments of the subject² which may better serve the purpose of those engaged in the valuation of an estate, or in other instances where great care should be exercised in order that all parties may be treated equably.

It is strange how frequently one who has been familiar during his entire business career with the handling of investment securities, or, who has been in almost daily contact with such matters, fails to comprehend the principles upon which bond values tables are computed. The writer has been time and again surprised to find that men who should understand such matters suppose that it is a mere calculation by simple arithmetic, and that not to obtain the results given in the ordinary tables of bond values by their method astonishes them. Such people have begun on the supposition, to illustrate, that they could take a bond bearing 6 per cent interest, maturing in ten years, costing 110, and divide the premium—10 per cent—by the length of time which the bond has to run—in the case cited, ten years—and, obtaining 1 as the result, deduct

it from 6 per cent, the rate which the bond bears, and assume, therefore, that the net return upon that particular investment is 5 per cent, the 10 per cent premium being charged off at the rate of 1 per cent yearly.

The failure in this reasoning arises from their not understanding the fundamental principles upon which such tables are based, which presuppose that the holder of a bond will, at the maturity of each one of the coupons, reinvest a sufficient portion of the money received, and keep it so invested until the maturity of the bond, so that the face value of the bond, added to the accumulation of reinvested interest will, at its maturity, be exactly equivalent to the original cost of the same.

We have now arrived at the parting of the ways in this computation. There are two classes of accountants, or what you may choose to call them, whose ideas at this point sharply diverge. The first proceeds on the principle that the portion of the coupon money set aside shall be compounded at the same rate as the net return upon the investment. To illustrate: If it is a twenty-year 5 per cent bond, and selling at such a price as to yield 6 per cent, it is assumed that the money set aside shall be compounded at 6 per cent, regardless of the rates of interest which will probably prevail at such investing periods. To show further the absurdity of this, imagine the owner of several different lots of bonds, one lot having been purchased at a

¹ This article is a reprint from the March 1910, *Annals*, by Montgomery Rollins.

² See Chapter VIII of *The Accountancy of Investment*, by Charles E. Sprague.

price to yield him 6 per cent per annum, another at 5 per cent, and another at 4 per cent. The class which we are now discussing assumes that a portion of these interest payments, even though they may all fall due at the same dates, shall be reinvested at compound interest at 6 per cent, 5 per cent, and 4 per cent respectively. It is unreasonable to believe that these three separate rates of interest will be ruling, at the same time for a similar grade of securities, or that there is any likelihood that the investor will guide himself, in the reinvestment of this interest, by taking into consideration the net return which he is enjoying upon the bonds in question.

The other school, which is undoubtedly the correct one, proceeds upon the plan of the reinvestment at some fixed definite per cent, say $3\frac{1}{2}$ per cent or 4 per cent, without any regard to the net return which the original purchase price of the investment warrants. It does not take a very deep knowledge of finance to see that it is fairer to predict the future investment rates of money at some average rate, such as just mentioned, than at such widely divergent rates as by the other plan.

In the case of bonds selling at par, both schools would be right as to their results, because there are no premiums or discounts to be provided for. Also, in the case of a bond computed by the first method, selling at a net return which is the arbitrary rate assumed as the reinvestment rate of the second method, then, likewise, will the two schools agree. In all other instances they disagree. An idea of the amount of this disagreement may be shown by referring to the table accompanying this article, by which it will be seen

that a 6 per cent bond having twenty years to run, selling to net 5 per cent, is 112.55, and, in this case, 5 per cent is the compounding rate. By the use of a table of bond values based on a 4 per cent compounding rate, 112.03 is the result—a difference of nearly one-half of 1 per cent. Yet custom has decreed, and undoubtedly always will, that the tables based upon the principles of the first school, including those of the author of this article, which he conceives to be inaccurate, are likely always to prevail in use, and that the tables of the second school will never reach any wide circulation. It would be relatively as great an undertaking in financial matters to change from the incorrect to the correct school, as it would be to introduce the metric system into this country, or to change the present standard gauge of railways.

In the circulars of banking houses offering investment securities, in the financial columns of newspapers, and in the "shop" talk of the investment dealer will be encountered, with great frequency, such expressions as: "net return upon the investment," or, to be more specific, "a bond pays the investor $4\frac{1}{2}$ per cent," "yields $4\frac{1}{2}$ per cent," "is on a $4\frac{1}{2}$ per cent basis," or whatever the rate may be. In any event, the intent is to convey the information as to what rate of interest the purchaser of a certain security at a given price may expect upon his money. By this is meant the proportionate rate which the income upon any investment bears to the total cost of that investment—"accrued interest" excepted—taking into consideration the time which it may be outstanding before being paid off.

Stocks, as a rule, are irredeemable, and consequently are figured as perpetual. Most bonds and other investments of a redeemable nature—having some fixed determinable time to run—are not so figured. A simple illustration of an irredeemable stock would be that of one selling at \$200 per share, upon which dividends are being paid at the rate of 8 per cent yearly. In this case, the ratio of dividend, namely, 8 per cent, to the total cost, \$200, would be 4, or 4 per cent, which is the investment yield. If the price of the stock were but \$100 per share, and the dividend rate 4 per cent per annum, the yield would still be 4 per cent.

We now come to a security having some determinable date of maturity, and the problem likewise becomes more complicated. Special tables, commonly known as bond values tables, are used to ascertain the net returns from investments of this class. The books comprising these tables are so arranged as to cover different periods for which redeemable securities are likely, in the experience of bankers, to be outstanding; and, therefore, cover half yearly periods from six months to, say, fifty years, and then at greater intervals to one hundred years, it being supposed that most securities of this class will mature in, perhaps, twenty-five or thirty years and the vast majority inside of fifty years.

To simplify this article, page 15, which covers the twenty-year period, is reproduced from one of the ordinary books in use.

Henceforth, we shall speak of all redeemable securities as bonds. Let us now take an example of a bond having twenty years to run, bearing 5 per

cent interest. At what price must it be sold to pay the investor 4 per cent? The twenty-year page above covers the period in question. The column headed 5 per cent must be taken and followed down until opposite 4 per cent in the extreme left-hand column. A result of 11,368 will be found, which is the rate of purchase of a bond to yield 4 per cent upon the investment; that is to say, \$1,136.80, plus the interest which may have accrued since the last maturing coupon. This 4 per cent net return means 4 per cent per annum for each of the twenty years, and is reckoned upon the entire sum invested—"accrued interest" excepted—or in this case, \$1,136.80.

The time upon which to compute the net return, or the price of the bond, is the time from the date of computation to the maturity of the issue, not from the date of the issue, as some inexperienced persons have occasionally supposed, unless, of course, the date of issue and the date of computation should coincide.

This seems a pertinent place to consider at some length the matter of "accrued interest" referred to above. Strange as it may seem, there are many investors who fail to comprehend a subject which, to most, is so simple. It is customary to make nearly all bonds with interest payable twice yearly. Let us take a \$1,000 bond bearing 5 per cent interest. Upon this there will be found two coupons of \$25 each, and, we will say, for the sake of simplicity, that these coupons fall due, one in January and the other in July of each year. On the first day of September a purchase is made of a twenty-year bond at 113.68 and accrued interest. The purchaser will pay \$1,136.80, which

TABLES OF BOND VALUES

15

20 YEARS

INTEREST PAYABLE SEMI-ANNUALLY.

PER CENT PER AN.	3%	3½%	4%	4½%	5%	6%	7%
2.90	101.51	109.06	116.60	124.15	131.70	146.80	161.89
3.	100.00	107.48	114.96	122.44	129.92	144.87	159.83
3.10	98.52	105.93	113.34	120.75	128.16	142.98	157.81
3½	98.15	105.55	112.94	120.33	127.73	142.52	157.31
3.20	97.06	104.41	111.75	119.09	126.44	141.13	155.82
3½	96.34	103.66	110.97	118.28	125.59	140.21	154.83
3.30	95.63	102.91	110.19	117.47	124.75	139.30	153.86
3.35	94.93	102.17	109.42	116.66	123.91	138.40	152.89
3½	94.58	101.81	109.04	116.27	123.49	137.95	152.41
3.40	94.23	101.44	108.66	115.87	123.08	137.51	151.93
3.45	93.54	100.72	107.90	115.08	122.26	136.62	150.98
3½	92.85	100.00	107.15	114.30	121.45	135.74	150.04
3.55	92.17	99.29	106.41	113.52	120.64	134.87	149.11
3.60	91.50	98.58	105.67	112.75	119.84	134.01	148.18
3½	91.16	98.23	105.30	112.37	119.44	133.58	147.72
3.65	90.83	97.88	104.94	111.99	119.04	133.15	147.26
3.70	90.17	97.19	104.21	111.24	118.26	132.30	146.35
3½	89.51	96.50	103.50	110.49	117.48	131.46	145.44
3.80	88.86	95.82	102.78	109.74	116.70	130.63	144.55
3½	87.90	94.81	101.73	108.64	115.56	129.39	143.22
3.90	87.58	94.48	101.38	108.28	115.18	128.98	142.78
4.	86.32	93.16	100.00	106.84	113.68	127.36	141.03
4.10	85.09	91.86	98.64	105.42	112.20	125.76	139.32
4½	84.78	91.54	98.31	105.07	111.84	125.37	138.90
4.20	83.87	90.59	97.31	104.03	110.75	124.19	137.63
4½	83.27	89.96	96.65	103.35	110.04	123.42	136.80
4.30	82.68	89.34	96.00	102.66	109.33	122.65	135.98
4¾	81.80	88.42	95.04	101.65	108.27	121.51	134.75
4.40	81.51	88.11	94.72	101.32	107.93	121.14	134.35
4½	80.35	86.90	93.45	100.00	106.55	119.65	132.74
4.60	79.22	85.72	92.21	98.70	105.19	118.18	131.16
4¾	78.94	85.42	91.90	98.38	104.86	117.82	130.77
4.70	78.11	84.55	90.99	97.43	103.86	116.74	129.61
4¾	77.57	83.98	90.39	96.80	103.20	116.02	128.84
4.80	77.02	83.40	89.79	96.17	102.55	115.32	128.08
4¾	76.22	82.56	88.90	95.24	101.59	114.27	126.95
4.90	75.95	82.28	88.61	94.94	101.27	113.92	126.58
5.	74.90	81.17	87.45	93.72	100.00	112.55	125.10
5.10	73.86	80.09	86.31	92.53	98.76	111.20	123.65
5½	73.61	79.82	86.03	92.24	98.45	110.87	123.29
5.20	72.85	79.02	85.19	91.36	97.53	109.87	122.22
5¾	72.34	78.49	84.64	90.78	96.93	109.22	121.51
5.30	71.85	77.97	84.09	90.21	96.33	108.57	120.81
5¾	71.11	77.19	83.27	89.36	95.44	107.60	119.77
5.40	70.87	76.94	83.01	89.07	95.14	107.28	119.42
5¾	69.90	75.92	81.94	87.96	93.98	106.02	118.06
5.50	68.72	74.68	80.64	86.59	92.55	104.47	116.38
5¾	67.57	73.46	79.36	85.26	91.15	102.95	114.74
5.60	66.43	72.27	78.11	83.95	89.78	101.46	113.13
5¾	65.33	71.11	76.89	82.66	88.44	100.00	111.56
6.	64.25	69.97	75.69	81.41	87.13	98.57	110.01
6½	63.19	68.85	74.51	80.18	85.84	97.17	108.50
6¾	62.15	67.76	73.36	78.97	84.58	95.79	107.01
6.60	61.14	66.69	72.24	77.79	83.34	94.45	105.55
6¾	60.14	65.64	71.14	76.64	82.13	93.13	104.12
6.70	59.17	64.62	70.06	75.50	80.95	91.83	102.72
6¾	58.22	63.61	69.00	74.39	79.78	90.57	101.35
7.	57.29	62.63	67.97	73.31	78.64	89.32	100.00

is the principal and premium, but in addition thereto he will pay the interest upon \$1,000, the face value of the bond, from July first, when the last coupon was detached, until September first—two months. The bond bearing 5 per cent, this interest will be computed at that rate, and the investor will pay, in addition to the \$1,136.80, \$8.33, which is the interest on \$1,000 for two months at 5 per cent. An investor may fail to comprehend that this \$8.33 is not thrown away. As a matter of fact, it is returned to him when the next coupon is paid, which will be, following this illustration, January first. The investor will have held the bond four months, at the end of which time he will receive not only 5 per cent per annum for the time he will have held it, but also the \$8.33 which he paid to the holder from whom he made the purchase. He will be out, however, interest on the \$8.33 for the four months.¹ Here is where bonds and stocks sell differently, although there are exceptions to this rule. When a stock is sold, a sufficient price is added to the quotation so that it offsets the amount of interest—dividend—which has accrued since the last payment. A stock selling ordinarily

¹ The loss of interest upon the interest brings up the point that ordinary investment transactions always ignore this loss. Unless a bond by chance happens to be purchased upon a coupon date there must be some accrued interest paid, and absolute accuracy in figuring would demand the taking of this into consideration and would change slightly the net yield if it were figured into the actual purchase price, even though it were returned to the purchaser at the next coupon period. This would complicate matters so much, however, that it is seldom taken into consideration, as the amount, which is always against the purchaser and in favor of the seller, is slight.

at \$100 a share and paying dividends at the rate of 4 per cent per annum—2 per cent, say, each January and July—would be quoted, everything else being equal, at 101 half way between the two dividend periods, as the 1 per cent premium would fairly represent the dividend accumulation for three months at the rate of 4 per cent per annum.

On the New York Stock Exchange bonds are sold in this same way, and quotations include the interest accrued. Upon the Boston Stock Exchange they are sold—income or defaulted bonds excepted—plus the accrued interest, and the difference is here accounted for in the quotations upon the two different markets of the same security. The ordinary bankers selling bonds not listed upon the New York Stock Exchange customarily sell them “with accrued interest.”

The foregoing explains such common expressions as “103 and accrued interest,” “109 and accrued interest,” or “109 and interest.”

An expression something like this is often encountered: “Yielding 4 per cent for the first ten years and 5 per cent for all time thereafter which the bond may run.” By this it is understood that the issuer of the bond has the right to redeem it any time after ten years, but shall not be obliged so to do until some later date, as, in this case, twenty years. These bonds are known by such titles as “10-20 year bonds” or “10-20’s,” by which it is understood that they are absolutely due and payable in twenty years, but optional on the part of the issuer to redeem any time—generally upon a coupon date—between ten and twenty years. In a case of this kind, the seller must not assume that the bond

will run longer than ten years. The greater the length of time which any form of an indebtedness, selling at a premium and having a fixed rate of interest, may be outstanding, the greater the percentage in interest return to the holder, prices always being equal. Therefore, in selling a 10-20 year bond at a premium, the net return should be computed on the basis of its being outstanding the minimum possible number of years—in this case ten—but should it run twelve years, for instance, before being paid off, the purchaser would benefit by the two additional years. That is, if the net

ment securities, who should know better, make the mistake of averaging the life of the issue, and then, by the use of a table of bond values, basing their computation upon this average maturity; whereas, a separate price should be computed for each maturity, and then the average price taken—supposing, of course, that it is the intention to make one price for the entire lot, including all the different maturities. If bonds are bought by the first method and retailed by maturities, either a loss will result, or a less profit than expected.

The fallacy of averaging the matu-

ERRATUM

On page sixteen of the March, 1920, issue, the sentence: "On the New York Stock Exchange bonds are sold in this same way, and quotations include the interest accrued" should read: "At present, bond quotations on the New York Stock Exchange do not include the interest accrued."

return or yield, the following rule must be observed if the issue is "optional," so called, as in the case just cited:

RULE FOR COMPUTING NET YIELD OF OPTIONAL BONDS

When bonds are selling at a premium, the interest return must be computed upon the shortest possible time which the security may be outstanding; when selling at a discount, the greatest length of time which it may be outstanding must be used as the basis.

In buying an issue of bonds known as "serials," that is to say, with a certain portion of the issue maturing periodically, many dealers in invest-

true application.

An investor should guard against deceiving himself as to the income upon a redeemable bond for which he has paid some price other than par. Let us illustrate by taking a bond having twenty years to run, bearing 5 per cent interest, and for which payment has been made at the rate of 113.68—that is, \$1,136.80 and accrued interest, the net return by the ordinary bond values tables being 4 per cent. That is to say, the investor is supposed to receive 4 per cent per annum upon the purchase price of \$1,136.80. In actual practice, as the coupons fall due, the investor receives \$25.00 each six

is the principal and premium, but in addition thereto he will pay the interest upon \$1,000, the face value of the bond, from July first, when the last coupon was detached, until September first—two months. The bond bearing 5 per cent, this interest will be computed at that rate, and the investor will pay, in addition to the \$1,136.80, \$8.33, which is the interest on \$1,000 for two months at 5 per cent. An investor may fail to comprehend that this \$8.33 is not thrown away. As a matter of fact, it is returned to him when the next coupon is paid, which

at \$100 a share and paying dividends at the rate of 4 per cent per annum—2 per cent, say, each January and July—would be quoted, everything else being equal, at 101 half way between the two dividend periods, as the 1 per cent premium would fairly represent the dividend accumulation for three months at the rate of 4 per cent per annum.

On the New York Stock Exchange bonds are sold in this same way, and quotations include the interest accrued. Upon the Boston Stock Exchange they are sold—income or defaulted bonds excepted—plus the accrued

When a stock is sold, a sufficient price is added to the quotation so that it offsets the amount of interest—dividend—which has accrued since the last payment. A stock selling ordinarily

¹ The loss of interest upon the interest brings up the point that ordinary investment transactions always ignore this loss. Unless a bond by chance happens to be purchased upon a coupon date there must be some accrued interest paid, and absolute accuracy in figuring would demand the taking of this into consideration and would change slightly the net yield if it were figured into the actual purchase price, even though it were returned to the purchaser at the next coupon period. This would complicate matters so much, however, that it is seldom taken into consideration, as the amount, which is always against the purchaser and in favor of the seller, is slight.

often encountered: "Yielding 4 per cent for the first ten years and 5 per cent for all time thereafter which the bond may run." By this it is understood that the issuer of the bond has the right to redeem it any time after ten years, but shall not be obliged so to do until some later date, as, in this case, twenty years. These bonds are known by such titles as "10-20 year bonds" or "10-20's," by which it is understood that they are absolutely due and payable in twenty years, but optional on the part of the issuer to redeem any time—generally upon a coupon date—between ten and twenty years. In a case of this kind, the seller must not assume that the bond

will run longer than ten years. The greater the length of time which any form of an indebtedness, selling at a premium and having a fixed rate of interest, may be outstanding, the greater the percentage in interest return to the holder, prices always being equal. Therefore, in selling a 10-20 year bond at a premium, the net return should be computed on the basis of its being outstanding the minimum possible number of years—in this case ten—but should it run twelve years, for instance, before being paid off, the purchaser would benefit by the two additional years. That is, if the net return were computed, as it should be, on the ten-year basis, for any additional time which the bond might run, the investor would obtain a yield of the full rate of interest borne by the bond.

Should a bond be selling at a discount, the shorter the length of time which it runs the greater the interest return, prices being equal; the contrary is true of a bond selling at a premium. In computing the interest return or yield, the following rule must be observed if the issue is "optional," so called, as in the case just cited:

RULE FOR COMPUTING NET YIELD OF OPTIONAL BONDS

When bonds are selling at a premium, the interest return must be computed upon the shortest possible time which the security may be outstanding; when selling at a discount, the greatest length of time which it may be outstanding must be used as the basis.

In buying an issue of bonds known as "serials," that is to say, with a certain portion of the issue maturing periodically, many dealers in invest-

ment securities, who should know better, make the mistake of averaging the life of the issue, and then, by the use of a table of bond values, basing their computation upon this average maturity; whereas, a separate price should be computed for each maturity, and then the average price taken—supposing, of course, that it is the intention to make one price for the entire lot, including all the different maturities. If bonds are bought by the first method and retailed by maturities, either a loss will result, or a less profit than expected.

The fallacy of averaging the maturity, and computing the net return upon the period of time resulting, arises from the fundamental principle set forth elsewhere in this article, that the net return upon a bond is based upon reinvesting at compound interest a certain portion of the coupons as they severally become due. Consequently, each maturity of a serial issue must be computed upon its own time in order that this principle of compounding the interest may have true application.

An investor should guard against deceiving himself as to the income upon a redeemable bond for which he has paid some price other than par. Let us illustrate by taking a bond having twenty years to run, bearing 5 per cent interest, and for which payment has been made at the rate of 113.68—that is, \$1,136.80 and accrued interest, the net return by the ordinary bond values tables being 4 per cent. That is to say, the investor is supposed to receive 4 per cent per annum upon the purchase price of \$1,136.80. In actual practice, as the coupons fall due, the investor receives \$25.00 each six

months, or \$50.00 per annum. When the bond matures, he will receive, in addition to the last interest payment, only the principal sum of \$1,000. There is, therefore, \$136.80 premium paid that must be accounted for in some manner. A sinking fund, so-called, may be set aside each half year out of the interest as received to provide for this premium. The investor is entitled to reckon his income at 4 per cent per annum on \$1,136.80, the total purchase price, which would be \$45.47, or, for each six months' period, one-half that sum; namely, \$22.74. Deducting this from the semi-annual coupon leaves \$2.26, which sum, if invested each six months at 4 per cent, will, at the maturity of the bond, added to the principal sum, equal \$1,136.80, the original purchase price.

This is all based on the supposition that the \$2.26 above mentioned will be invested promptly when received twice yearly at the rate of 4 per cent per annum; in other words, that it will be compounded at 4 per cent per annum. It may be that this is an unfair rate, that a lower rate, $3\frac{1}{2}$ per cent, or the prevailing savings bank rate, would be a better one to choose. If this were the case, a proportionately larger sum would have to be set aside each six months to create a sufficient sinking fund.

So far, we have had but one period, *i. e.*, twenty years, together with a fixed net return and price. The amount of the sinking fund must necessarily vary with the change of any one of the three factors: time, net return, or price. We will change but one of these, the time. Take nineteen years as the life of the bond

when purchased. The tables show the price of a 5 per cent, nineteen-year bond to net 4 per cent to be 113.22, or \$1,132.20 for a \$1,000 bond. Proceeding again as above, we find 4 per cent on this sum to be, for a half year, \$22.64, or \$2.36 less than \$25.00, the amount of the six months' coupon. Here, then, is \$2.36 for a nineteen-year bond, as against \$2.26 for a twenty-year bond—prices and net return being equal—as the sinking fund.

The question naturally arises as to the way to treat similarly a bond bought at a discount. Let us again illustrate: A 5 per cent bond having twenty years to run, if purchased at the rate of 88.44, or \$884.40 and accrued interest, will net the investor 6 per cent; that is, 6 per cent on the \$884.40 invested. As the coupons fall due, he obtains, the same as in the above case, \$25.00 each six months, or \$50.00 per annum. When the bond matures he will receive, in addition to the interest, the full principal sum of the bond, \$1,000, for which he has paid but \$884.40. There is, therefore, a difference here of \$115.60, by which amount the purchaser will be apparently enriched at the maturity of his bond. If, however, he wishes to avail himself of the full 6 per cent net return which he is entitled to receive, he must anticipate this difference of \$115.60, which may be done in this manner: He is entitled to reckon his income at 6 per cent on the \$884.40, the original purchase price, which, for each six months, would call for \$26.53. The coupon which he detaches from his bond provides for but \$25.00 of this. There is, consequently, the sum of \$1.53 which he should

receive from some source to make his full 6 per cent interest. He may anticipate the \$115.60 above referred to by taking from some other fund this \$1.53 each six months. This represents the amount which, if invested at 6 per cent, the same net return as provided for in the investment, will, at the maturity of the bond, added to the \$884.40, just equal \$1,000. It will be noticed, however, that in this instance it is supposed that the \$1.53 will be compounded at 6 per cent, and here again the fallacy of the customary method of compounding the reinvestment portion is emphasized, for it is not likely, nor supposable, that these sums can be compounded at 6 per cent. But, in this case, as the bond is bought at a discount, the investor will not be likely to deceive himself; for accepting an arbitrary compounding rate of 6 per cent is necessarily taking a less amount (in this case \$1.53) than he would if it were compounded at a lower rate. To prove this, let us suppose that 4 per cent is taken as this rate. The investor might then allow himself \$1.88 each six months to add to his \$25.00 to provide himself with a 6 per cent net rate.

To explain one more point in this connection, and following the illustration above where \$1.53 is taken each six months, which must be taken from some other fund, is there not a loss of interest each time upon that amount until the maturity of the bond? Or, in other words, what provides for the interest on these sums? That comes back at the maturity of the bond, for it will be noticed that if \$1.53 be multiplied by 40, the number of coupons, the sum equals \$61.20. But \$115.60 will be received at the end of

twenty years, and the difference between these last two sums is \$54.40. That is to say, \$54.40 represents the compound interest on the \$1.53 periodically taken and expended as income.

The above argument is based upon the supposition that a bond will be held until maturity, or that, in case it should be disposed of earlier, the price realized shall be such as to give a yield equivalent to that at the time of purchase. In other words, if a bond having twenty years to run, bearing 5 per cent interest, is bought at 113.68, *i. e.*, a 4 per cent basis, and is sold at the end of five years it is supposed that the price shall be computed on a basis of the fifteen years which the bond still has to run, which, to give a 4 per cent basis, would be 111.20. Instead, however, the holder of such a security may sell it at a higher price than the equivalent basis. What, then, shall be done with this surplus or profit? This question has been considered many times by the courts, who have decided that this excess premium belongs to the principal and should not be considered as income. This is from the standpoint of trustees. The ordinary investor, however, may treat it as he likes, except, that in order to ascertain whether or not he has made a profit, he must find the price for the equivalent basis, and compare it with the price received.

Loring's *A Trustee's Handbook* deprecates the practice of buying bonds at a discount to offset those purchased at a premium. The reasoning is that the difference in price is not simply a question of interest, but more often one of security.

Bond values tables cannot cover all rates of interest and all maturities.

Neither can they give every conceivable net yield. To have in one volume sufficient matter to cover all the possible results, which investors or bankers may desire to obtain in the course of their investing or business careers, would require a volume beside which the family Bible of old would pale into insignificance. The most likely called for and commonly desired results only can be given in a volume of moderate dimensions. Likewise, financial conditions change. At times, rates of interest between $3\frac{1}{4}$ and $3\frac{3}{4}$ per cent are the prevailing levels of high-grade securities. It was not many years since that few bond dealers would have had the temerity to predict a long-continued interval during which high-grade securities could be purchased to net the investor in the neighborhood of 5 per cent. Yet such is the condition of affairs at the time of writing this article. This is stated to illustrate the difficulties with which the authors of tables of bond values have to contend in order to meet the popular demand. Tables issued a few years ago during the prevailing low rates of money are of little value today, when the rates have so largely increased.

The fact, however, that a book of bond values does not give every result sought for need not deter the user thereof from making some attempt to secure the result desired by a simple use of mathematics. We will confine ourselves to that twenty-year page already referred to as an illustration.

Suppose it were desired to know the price at which a $5\frac{1}{2}$ per cent bond should be sold to net the investor 4 per cent. In the 6 per cent column, opposite 4 per cent, will be found 127.36. In the 5 per cent column, directly

to the left, 113.68. Add these two results together and divide by 2, and you have the result for a $5\frac{1}{2}$ per cent bond.

The highest rate bond which the sample page covers is 7 per cent. Prices to cover an 8 per cent bond may be found by obtaining the difference between those of a 7 per cent and 6 per cent rate and adding the result to the former. Example:

Price of a 20-year 7 per cent bond to net $5\frac{1}{2}$ per cent.....	\$118.06
Price of a 20-year 6 per cent bond to net $5\frac{1}{2}$ per cent.....	106.02
Subtract.....	\$12.04
Add price of 7 per cent bond ...	118.06

Price of 20-year 8 per cent bond to net $5\frac{1}{2}$ per cent.....	\$130.10
--	----------

By an understanding of all this, it will be clear that the results for a bond bearing any rate of interest may be quickly computed.

Again, suppose it is a 5 per cent bond having twenty years to run and that it is desired to find the price at which it will net the holder 4.05 per cent. The nearest results in the table here given to this are 4 per cent and 4.10 per cent net returns. Find the column headed 5 per cent; obtain the results for 4 per cent and 4.10 per cent; add them together, divide by 2, and the result, near enough for all practical purposes, will be obtained. There will, however, be a very slight inaccuracy. If a result for 4.03 per cent were desired, it would be necessary to find the prices opposite 4 per cent and 4.10 per cent; subtract the lesser from the greater, divide by 10, which is the difference between 4 per cent and 4.10 per cent in the left hand column, and then you obtain what the ratio of

change in price is for each one-hundredth of one per cent increase in the net return. Multiply your result, to follow this example, by 3, and deduct it from 113.68, the price to net 4 per cent, and you obtain the price of a 5 per cent bond to net the investor 4.03 per cent per annum. This, again, is a rough mathematical calculation and not absolutely accurate, but a little understanding of such matters will enable one to form approximate and useful conclusions.

It is sometimes desired to ascertain what a bond will yield at a given price when sold "flat." (By this expression it is understood that the purchaser pays no accrued interest.) A twenty-year bond, bearing 5 per cent interest, with coupons maturing semi-annually, February and August, is offered for sale on April 1st at 115 "flat." What does it pay? We must first find out how much interest has actually accrued upon the bond. In this case, it is two months. This, then, must be brought into dollars and cents. Two months' interest at 5 per cent on \$1,000 (360 days to the year) is \$8.33. The price of the bond is 115: that is, \$1,150 for a \$1,000 bond. Deducting the \$8.33 just mentioned, you have as a result \$1,141.67, which brings the bond down to 114.167, or, rounding out the second place to the right of the decimal, 114.17. To put it in another form, 114.17 and accrued interest is equivalent to 115 "flat." By referring to the table under the column headed, 5 per cent, we find that 114.17 lies between 115.18, which is a 3.90 per cent basis, and 113.68, which is a 4 per cent basis. We deduct the lesser of these two figures from the greater and obtain 1.50, which represents the ratio of increase

for each variation of ten one-hundredths of one per cent in the net return. That is, a 3.90 per cent basis is to a 4 per cent basis as 115.18 is to 113.68. Divide 1.50 by .10, the difference between 3.90 per cent and 4 per cent, and you get what the ratio of decrease in price is for one one-hundredth of one per cent, which would be 15. Now we deduct 114.17, which is the price given, from 115.18, the nearest higher price in the tables, and obtain as a result 1.01. Divide this by 15, the ratio of change in price for each increase of one one-hundredth of one per cent in the net return, and we get .067; by which we understand that 114.27, the price given, is less than 115.18, the next higher price in the tables, as .067 is the increase in net return over 3.90 per cent. Add, therefore, these two together, 3.90 and .06+, and we obtain 3.96+, which equals the approximate net yield, according to this example, of a bond selling at 115 "flat," which is the equivalent of 114.17 and "accrued interest."

To sum up:

Price of bond—"flat"...	\$115.
Deduct 2 months' interest.....	.833
<hr/>	
Price of bond—"with interest".....	\$114.167 or \$114.17
Price of bond to yield 3.90 per cent	915.18
Price of bond to yield 4 per cent.....	113.68
<hr/>	
Difference in price to equal .10 difference in yield.....	\$1.50
15 per cent difference in yield, therefore, equals.....	.15

Price of bond to yield 3.90 per cent equals.....	\$115.18
Deduct price of bond in example....	114.17
Difference.....	\$1.01
Divide by 15, the difference in price equivalent to difference in yield for each $\frac{1}{16}$ per cent and get....	.067
Add to.....	3.90
The result desired.....	3.96 +

Be it understood, however, that this result is not absolutely accurate. There will be a variation of one or more one-hundredths, but it is a rough-and-ready way to obtain a very close approximation to what a bond will pay under conditions that are given. By the above method, it will be understood how to obtain the net return at a given price, when the price varies from what is actually given in the tables used.

It is seldom that a security is purchased upon a coupon date, and when such is not the case, tables which cover only half yearly periods are only approximate and must be adjusted to the actual time which the bond runs before maturity. For example, take a bond with 19 years $8\frac{1}{2}$ months to maturity bearing 5 per cent interest, to net 4 per cent. The twenty-year table gives 113.68; the $19\frac{1}{2}$ year table, 113.45. Subtract and get .23 which equals the difference in price between $19\frac{1}{2}$ and 20 years for a 5 per cent bond netting 4 per cent. Nineteen years $8\frac{1}{2}$ months lies between these two periods, and is $2\frac{1}{2}$ months longer than $19\frac{1}{2}$ years. There being twelve half months in a half year, divide 23, found above, by 12 and get .01916. As $2\frac{1}{2}$ months are 5 half months, multiply .01916 by 5

and get .0958, which is added to the price of the $19\frac{1}{2}$ year bond.

Thus 113.45 and .0958 give 113.5458, or, rounding out, 113.55, which is close enough for practical purposes.

We have been so far discussing bond values tables based upon redeemable securities with interest payable semi-annually. There are many issues of bonds in existence bearing annual interest, far more than the average bond dealer or investor realizes. There are, likewise, many other issues, such as our government securities, which have interest payable quarterly. It is not fair, therefore, to use a table of bond values based on semi-annual interest payments to compute the net return upon issues of bonds with interest payable in annual or quarterly instalments. The semi-annual bond values tables, as already explained, are based upon the theory that a portion of the coupon money, as received, will be reinvested twice a year, and the interest compounded. In a bond with the interest payable but once a year, this money can only be reinvested and compounded once a year. Likewise, in a quarterly table, it will be four times a year. To show the difference, let us take (again see the table) a 4 per cent bond having twenty years to run. At 114.96 it pays 3 per cent as a semi-annual bond. As a bond with interest payable annually the price would be 114.88, and as a bond bearing quarterly interest payments, the price would be 115.00. There are to be had, therefore, separate sets of tables to meet these requirements.

Treatment of Bonds at the Time of Reorganization

By ARTHUR S. DEWING

Graduate School of Business Administration, Harvard University

A DISTINGUISHED jurist remarked, nearly forty years ago, that "it rarely happens in the United States that foreclosures of railway mortgages are anything else than the machinery by which arrangements between creditors and other parties in interest are carried into effect."¹ This apparently revolutionary doctrine represented the acknowledgment by the highest court that the adjustment of the financial misfortunes of a railroad was to be conducted along different lines from the adjustment of the affairs of any other bankrupt business. It was the tacit acknowledgment that a railroad occupied a peculiar and individual position in our economic life and that its financial affairs were affected by its social significance. In effect, it was the extension of the social responsibility of a railroad's operation, —as developed in preceding years²— to a railroad's financial affairs. Prophetic of the future was Justice Waite's grasp of the substance behind the form of a railroad reorganization, for since this statement was made the entire current of events in the field of railroads has been such as to amplify and reinforce its truth. Furthermore, the whole course of corporate reorganizations in all fields of industrial activity has followed in the wake

of his theory of railroad reorganization.

The present theory and practice of corporate reorganization has been the result of a slow evolution in which the exigencies of financial necessity have always dominated legal forms. This is clear from its purpose; for reorganization is surgery applied to corporate failure. It is the climax of blasted hopes and thwarted ambitions. As such, it is, even in its happiest light, merely an expedient for making the best out of an unfortunate situation. It necessarily involves a conflict of legal rights, and it is necessarily carried through under the stress of disappointment, ill-temper and personal animosities. It reaches down into the fundamentals of corporate affairs. For this reason, if for no other, it is at once the most intricate and at the same time the most fascinating topic of corporation finance.

FACTORS DETERMINING THE STATUS OF BONDS AT REORGANIZATION

The fundamental character of the general subject of reorganization is shown by the treatment of bonds. For, in the end, the real and abiding security of a bond issue is its probable treatment at the time of reorganization. All else is superfluous. The mortgage securing the New York and Erie Railroad 4s of 1947 is the simplest and crudest railroad mortgage now in force. No corporation lawyer of the present would think of employing anything like it to secure a contemporary issue

¹ Chief Justice Waite, *Can. So. Ry. Co. v. Gebhard*, 109 U. S. 539 (1883).

² Granger cases beginning *Munn v. Illinois*, 94 U. S. 113 (1877); to *Stone v. Wisconsin*, 94 U. S. 181.

of bonds; yet, probably no corporation bonds are more secure than those issued under this old mortgage. The bonds are a first lien, of over seventy years' standing, on the main trunk line, representing the most important section of the shortest route between New York harbor and Chicago. They have withstood three separate reorganizations of the Erie system.

Five fundamental and important sets of conditions determine the status of any bond issue at the time of the reorganization of the corporation which is liable for the issue. The first two are concerned with the nature of the corporation, without reference to the bond issues involved in the reorganization. Two other sets of conditions are concerned with the economic and strategic position of the specific issue of bonds, in relation to the other obligations and liabilities dealt with in the reorganization. The fifth set of determining conditions is legal; superficially, these are of paramount importance; actually, they are insignificant compared with the others. Before discussing the treatment of any bond issue in particular, it is necessary to understand the bearing of these underlying factors.

Public Attitude Toward Bankrupt Corporations.

The first set of conditions is concerned with the public attitude toward the necessity and social importance of the business conducted by the bankrupt corporation. At the one end of a series is the privately owned water company, the business of which is so essential to the life of the community which it serves that public officials exercise a strict supervision over the

conduct of its business. Of similar inestimable economic importance to the nation are the great railways which make our present industrial organization possible. At the other end of the series are the small, locally owned manufacturing businesses engaged in the production of unimportant luxuries, of which the supply is always ample. Businesses of the former type are so interwoven into our modern mode of living that we designate them collectively by the term "public utilities." As the industrial order changes, businesses which at one time were not of great social significance become so, and the courts, sanctioned by social opinion, invest them with the privileges, restrictions and limitations that belong to public service corporations. The attitude of the public, as crystallized in judicial precedents and statutory law, toward the public character of a business has much to do with the treatment of the corporation's bonds at the time of reorganization. If the business of a bankrupt corporation is invested with a public character, the courts may permit a great variety of past and present debts to supersede all the bonds, even the underlying first mortgage, provided such a course is necessary in order to keep the public service enterprise in actual operation; whereas, a bankrupt business not invested with a public character will be liquidated by the courts for the benefit of the creditors, and no general creditor can acquire a priority of claim sufficiently strong to emasculate the security of the mortgage bondholders. In the one case, public convenience or necessity may supersede all the contractual priorities of a mortgage bond; in the other case,

the claims of the various creditors, including the bondholders, to the bankrupt's property follow logically the order of their lien on the corporate estate.

Character of Business Conducted by the Corporation

The second set of conditions are concerned with the specific character of the business conducted by the bankrupt corporation—the kind of market it supplies, the merchantability of its assets, the rapidity with which its capital is “turned over” and its natural capacity for borrowing capital. There is one type of business requiring a large amount of fixed capital, of which a power dam is an illustration, which has no current quick assets that can be sold for the benefit of creditors. It requires little or no working capital and, therefore, once it is in operation, it requires no loans from the banks. It supplies a relatively stable market. The services it sells cannot be “trade-marked” and little business skill is required for its administration.

At the other extreme is the type of business which requires little fixed capital—as a tannery—where the current assets constitute about all there is to the value of the corporation's property. The capital is “turned over” readily; the volume of purchases and sales fluctuates rapidly, so that large amounts of bank credit must be available at certain times. It produces a commodity for a highly competitive market and great skill is required for the administration of the business.

In the reorganization of the former type of business, general as well as underlying bonds may be left undisturbed, because the reorganized cor-

poration will have an assured and relatively constant earning power, and no need would arise for securing bank loans to carry, temporarily, an unusually large volume of business. In the reorganization of the second type, the old bonds must be scaled down to the lowest possible point, and in reorganization plans of markedly good technique all bonds of the bankrupt corporation are converted into stock. The plan must safeguard, above all else, the general borrowing credit of the reorganized corporation, and preserve the organization, the “good will” and the trade standing of the business. A bond, even a mortgage bond, of such a business is an empty symbol unless these intangible elements are maintained.

Economic Position of Bond Issues

The third set of conditions pertain to the earning capacity of the particular property which secures one bond issue in contrast to another bond issue of the same bankrupt corporation. In the reorganization of a large railway system, a large local utility or an industrial “trust” of hybrid origin, there are usually several separate issues of bonds. One issue is secured by a mortgage on one piece of property; another issue by a mortgage on an entirely different piece of property; and the two pieces of property have probably contributed differently to the earning capacity of the bankrupt corporation. Obviously, the bonds secured by the more lucrative property must be treated more liberally than those secured by property having a less inherent earning capacity. Obviously, no bondholders can be asked, under any circumstances, to accept new securities in a reorganized com-

pany which yields less income than the distinguishable earning capacity of the property securing the bonds; and, equally self-evident, bondholders whose only security is property having little or no independent earning capacity may be justly asked to endure any sacrifice in income short of the complete extinction of their investment.

Strategic Position of a Bond Issue

The fourth set of conditions have to do, again, with the property securing an issue of bonds—the strategic significance, rather than the explicit earning capacity, of the property. For it is true that in any complex financial structure the property securing one bond issue is more essential to the operation of the business as a whole than the property securing another. Obviously, the former issue must be treated with conspicuously greater liberality than the latter. This distinction is of great importance in adjusting the relative interests of different small, and separately secured bond issues in every complex reorganization, but it is especially important in the reorganizations of large railway systems. For, obviously, the holders of bonds secured by a mortgage on the main trunk stem of a railway system must be treated with the utmost liberality. They must be treated, in actual practice, with much greater liberality than the holders of bonds secured by a mortgage on a branch line, the traffic on which is important but not absolutely essential to the integrity of the reorganized property.

Legal Conditions

The fifth set of conditions to be considered are legal. Except in rare

cases,³ all bonds are issued under a covenant or indenture which specifies, explicitly, the rights of the bondholders in case of default. Often, however, federal and state statutes or judicial precedents have altered the significance and the strength of the legal privileges accorded the bondholders in their contract with the corporation, and these privileges, so far as they are binding, have a direct bearing on the claims of the bondholders to the assets of the corporation. Then, too, the general machinery prescribed by judicial procedure tempers the relative standing of bond issues. If the reorganization follows a foreclosure of one of the bond issues and a judicial sale of the assets of the corporation, severe pressure can be exerted on all the junior bondholders. In all respects, except actual command,⁴ a court can impose a reorganization plan

³ Like certain old debentures of the New York, New Haven and Hartford, and the Boston and Maine Railroads.

⁴ The court, by approving of the conditions of the judicial sale, may indirectly force the dissenting minority to accept the plan of reorganization approved by the assent of an overwhelming majority. But the court cannot directly force a security holder to accept a plan. "It is clear that the courts cannot directly or indirectly rewrite this reorganization agreement."—*Guar. T. v. Inter. Steam Pump Co.*, 231 Fed. 595 (1916). This was tried in one notable case, but the United States Circuit Court of Appeals (Supreme Court Justice Brewer rendering the opinion) declared against any such use of the court's power, on the ground that "there is no wide discretion vested in the chancellor which permits him to disturb contract rights—the rights of property. . . . It is not for the court to assume the power to compel because it believes it wise and good business. . . . Every man in this country decides questions in respect to his own property for himself."—*Merchants' Loan and Trust Co. v. Chicago Ry. Co.*, 158 Fed. 923 (1907).

upon recalcitrant bondholders. On the other hand, if no foreclosure sale is ordered by the court, and the plan of reorganization is carried out by persuasion only—without judicial pressure—then all the bondholders must be treated with great leniency. In some rare cases, there are special state statutes which affect the general priority of bondholders⁵ and, in other instances, the mental slant of the federal and state judges of the geographical region in which the reorganization occurs may affect the attitude of the court toward the sacredness of mortgage contracts. Yet, when all is said, the legal conditions of the reorganization are, on the whole, important, chiefly, as determining the form of the reorganization and the extreme limits that a reorganization committee can go in demanding sacrifices from bondholders; whereas, economic sanctions determine the substance or structure of the reorganization plan and the particular distribution of the sacrifices demanded of the various classes of security holders.

“REORGANIZATION IMPERATIVES”

These considerations apply to concrete cases of the treatment of particular bond issues in specific reorganizations. They are, however, circumscribed and limited in their application to two considerations which are paramount in every reorganization. The fixed charges of the reorganized company must be reduced so as to be well

within the earning power of the corporation and the reorganized corporation must be supplied with new money. The relative importance of these two considerations—one might almost call them reorganization imperatives—varies with the nature of the business conducted by the bankrupt corporation and the seriousness of the failure. But that they are of paramount importance is tacitly acknowledged by every practical business man who pretends to prescribe for a sick corporation, and explicitly stated by every writer on reorganization procedure. Possibly the most lasting contribution of the late J. Pierpont Morgan to the orderly development of American finance was his insistence that in the great railroad reorganizations, of which he was the dominating factor, these two principles should be strictly observed. And the railroad reorganizations following the panic of 1893 are to be contrasted with those that preceded it by a strict observance of these imperatives, notwithstanding the losses this involved.⁶

The detailed working out of these two imperatives gives rise to the problems and expedients encountered in every individual corporate reorganization. Let us consider, first, the reduction of fixed charges to within the reasonable limits of the earning capacity of the corporation. This is the point which most concerns the treatment of bonds.

⁵ In the recent reorganization of the Jackson Light & Traction Company of Mississippi, the first mortgage bondholders' committee found that an old state statute seemed to give the resident merchandise creditors a priority over the first mortgage bondholders.

⁶ For brief study of the historical development of the theory of railroad reorganization, see Dewing, A. S.—*The Theory of Railroad Reorganizations*, 8 *American Economic Review*, 774 (Dec. 1918).

REDUCTION OF FIXED CHARGES

Equipment Obligations

If the corporation to be reorganized is a railroad, any outstanding equipment trust obligations must be continued either according to their original tenor or else paid off in money. There is no other alternative. This is especially true if they were issued under the so-called Philadelphia plan, by which the title to the equipment does not pass to the road until the last installment of the trust is paid. Unless these obligations are paid, or at least continued, the owners can withdraw the locomotives and cars from the jurisdiction of the receiver and the railroad is deprived of its rolling stock and hence its ability to carry on its business. As a result of the observation of this principle, which brooks no exception, equipment obligations have a better investment standing than any other class of investment securities.⁷

Receiver's Certificates

The other type of bonds that receives special consideration in every type of reorganization are the receivers' certificates. These are issued either

⁷ The present writer does not know of a single case, throughout the whole range of American finance, wherein the holders of equipment obligations have been forced to endure a permanent loss. There are several instances—Denver and Rio Grande reorganization of 1886 and the Norfolk and Western reorganization of 1896—in which the holders were forced to refund their equipment obligations, but in the end they recovered the principal and interest. In two recent cases—Detroit, Toledo and Iron-ton, and Buffalo and Susquehanna Railway—the equipment under the obligations was withdrawn from the railroad and sold. But the prices realized were ample to satisfy the outstanding obligations.

to pay off the "six months" claims existing at the time of the receivership or else to secure the money to enable the receiver to meet absolutely necessary expenses when the current income is insufficient. Under ordinary circumstances, a reorganization plan must provide sufficient money to pay off, at par, these receiver's certificates, else the court will not permit the plan to be carried out. This applies to all types of reorganizations—railroad, public utilities and industrials—although it should be noted in passing that our federal courts show far greater willingness to permit their receivers to issue certificates of indebtedness that take priority over mortgage bonds in railroad receiverships than in industrial receiverships. Obviously, this attitude is based on the presumption that the right of the public users of a railroad to have good service takes priority over even the contractual rights of mortgage creditors. The principle of the inviolability of the claims of the holders of receivers' certificates has received some severe shocks of late, when the severity of several small railway failures has compelled even the holders of these certificates to undergo radical sacrifices. It is also interesting to note that the great legal strength of these obligations of the courts has proved less of a protection to investors than the mere business expediency upon which equipment obligations rest.⁸

⁸ Perhaps the most instructive of these severe failures is that of the Atlanta, Birmingham and Atlantic Railroad. At no time during the reorganization was there any question but that the equipment obligations would remain undisturbed by a reorganization. The interest and installments of principal were regularly paid. But in the first plan of reorganization (March,

Special Bond Issues

With the exceptions of equipment securities and receivers' certificates, all the bonds dealt with in any reorganization are the specific obligations of the financially embarrassed corporation itself. Their treatment is, therefore, a matter of comparative values. When it comes to lay down broad principles governing the treatment of special bond issues, one is confronted with hopeless confusion unless the general distinctions suggested in the opening paragraphs of this article are carried in mind. Of these, the one which is applied relentlessly, in formulating the reorganization plan of every bankrupt corporation, is the purely business principle that the holders of bond issues shall undergo sacrifices if the earnings of the corporation before the failure were insufficient to meet their fixed interest charges. This simple principle is seldom violated. It takes precedence over all others. For it is obvious that if bonds were allowed to remain undisturbed, when past experience had shown that the reorganized company could not earn the charges upon them, the corporation would immediately fail again. Legal and equitable rights of every description are dominated by the motive of giving the reorganized company at least a reasonable chance of surviving the immediate repetition of failure.

Small Underlying Issues

Among the various classes of bonds least likely to be in any way affected

by the reorganization, or called upon to make any real sacrifice, are the small, underlying issues. If they represent first mortgages on essential parts of the railway, the lighting system or the industrial plant, their position is probably impregnable, provided the net earnings of the entire corporation exceeded their fixed charges.

Sometimes, however, these underlying issues are refunded into large blanket mortgages, even though their holders are asked to make neither a real nor an apparent sacrifice. This usually occurs when the failure is unusually severe, and the reorganization plan proposes to simplify the entire financial structure of the corporation. Yet it should be noted in passing that in the reorganization of small corporations, the failure of which was so severe as to practically exhaust their apparent assets, it may be necessary for even the underlying bondholders to undergo a very substantial sacrifice. In a few cases of small railroads, the value of these first mortgage bonds has been utterly extinguished by the superposition of receivers' certificates above them, and the final sale of the corporate assets for even less than the receivers' certificates.⁹

⁹ The difficulty of forming any generalizations concerning the treatment of even prior lien bonds at the time of reorganization has led the writer of the present article to attempt to classify railroad failures and reorganizations with this very matter in view. It would appear that there are three types of railroad failures and resulting reorganizations.

Class I. This embraces serious, thoroughgoing failures of large railway systems. The causes are deep-seated and long-continued; the system has been over-extended; it has been under-maintained; it has not, nor is likely to have, an inherent earning capacity commensurate with its invested capital. Reorganiza-

1914) it was proposed to give the holders of receivers' certificates only 60 per cent in cash. And in the final plan of reorganization the holders of the receivers' certificates were forced to accept income bonds of subordinate and meagre value.

Junior Mortgage Bonds and Debentures.—Junior to the layers of underlying bond issues there are usually large issues of bonds, either mortgage or debenture, which represent the general obligations of the corporation. In fact, quite generally among industrials and also in the cases of railroads and public utilities which have been reorganized before, the senior issue of these general bonds represents the first funded lien of the corporations, as there are no prior lien underlying issues. The manner of treating these general bond issues is determined entirely by the past earnings of the corporation. If these were fully ample to meet the interest charges, then the issue is treated like one of the underlying mortgages. It is either allowed to remain undisturbed or else is refunded into a new issue of bonds with no loss or sacrifice to the holders.

tions of this type are as thoroughgoing as the failures which preceded them. Usually all the bonds of every description, including the underlying divisional and main line prior liens, are refunded into one, or, at the most, into two great consolidated issues. Generally the old general, refunding or debenture junior liens are refunded into preferred stock and rarely income bonds. Illustrative of this type are the Wabash reorganization of 1888, the Norfolk and Western reorganization of 1896 and, conspicuously, the recent Pere Marquette reorganization of 1907.

Class II. This embraces less serious failures of large railway systems. The causes are temporary, easily diagnosed and easily remedied. Although the earnings of the system are depressed, the best judgment indicates that the system contains an inherent earning capacity commensurate with its capitalization. Reorganizations of this type seldom penetrate beneath the superficial layers of the financial plan. The underlying and first general mortgage bonds are not disturbed. Quite frequently the only important result of the reorganization is the refunding of the uppermost layer of fixed charge

A serious question arises when it is quite doubtful, after adequate depreciation or maintenance charges are allowed, that the earnings of the corporation were adequate to meet the interest charges on the issue. Clearly, to allow the bonds of such an issue to remain undisturbed would be to jeopardize the solvency of the reorganized company. The charges upon them must be reduced or even entirely extinguished.

Until the reorganizations of the middle nineties, it was the custom to fund the coupons for the succeeding few years on the bonds upon which charges had not been earned. This gave the corporation a temporary rest from burdensome capital charges. But this was, at best, only a palliative and secured to the reorganized company no permanent relief. A much sounder practice is followed at the present time. Instead of seeking merely a temporary

obligations into preferred stock. Excellent illustrations of this type are the recent reorganizations of Chicago, Rock Island and Pacific Railway, and of the Missouri Pacific Railway, both in 1917.

Class III. This embraces the failures of small, local, unimportant and often unfinished railroads. As the securities are closely held and the fortunes are not of much public concern, the public admission of failure is usually postponed until the last ray of hope has vanished. Consequently, when the failure actually does come, it lays bare a very serious situation. In consequence, the reorganization of these little roads almost invariably involves the elimination of all security holders junior to the prior lien bonds. It involves, too, the refunding of these bonds into preferred and common stock, and usually an assessment in addition. In fact, instances are by no means rare in which the prior lien bonds are extinguished by the failure of the assets to sell for enough to pay the receivers' certificates.

For further details concerning this classification see 9 *American Economic Association Review*, 277 (June 1919).

"rest" for the corporation, one of four expedients is tried. Each one of these gives to the reorganized company some measure of permanent relief, although it invariably involves a considerable sacrifice on the part of the bondholders.

One method is to refund the old bonds into new long-term bonds of the same principal amount, but with a lower interest rate. A second method is to refund the old bonds into two new securities, one with fixed and the other with contingent charges.¹⁰ Thus the holder of \$1,000 par value of the 5 per cent general bond issue of a corporation which had failed to earn the full 5 per cent on the issue before the failure might receive \$500 par value in new 5 per cent general bonds and \$500, or even \$700, in new preferred stock. In this way the obligatory fixed charges would be cut in half, or very much reduced. A third method has been to refund the entire issue into new preferred stock bearing a higher rate of contingent return than the fixed charge on the old bonds. This method is frequently used when the issue is large and it is obvious that considerable amounts of money must be spent on the property of the corporation in the years immediately following the reorganization. It has the very great advantage of insuring the reorganized corporation complete rest from the fixed charge. A fourth method, considerably used

in the earlier reorganizations and somewhat revived of late, is to refund the fixed charge bonds into income bonds. And often two separate issues of income bonds are used, so that a portion of the contingent charge carried by the new securities has a priority over the rest. In this way the bondholder, who is forced to forego his fixed income, secures the assurance that at least some of his lost income will be restored to him at the earliest opportunity.¹¹

The decision as to which of these methods of dealing with the general bonds shall be adopted rests very largely upon the special circumstances attending each reorganization. If the failure was occasioned by special causes—embezzlement, failure of large creditor, sudden shrinkage of inventory, or even a nation-wide stringency in the money market—probably no very serious sacrifices will be asked of the bondholders. Almost certainly they will not be asked to refund their bonds into income bonds or preferred stock, with the positive assurance that other new fixed-charge bonds will be superimposed ahead of their securities. But this is exactly what will happen if the failure is due to deep-seated and far-reaching causes. The justice doled out to the bondholders is purely a matter of expediency.

¹⁰ The word "contingent" as applied, in this article, to securities or charges implies that the charges which such securities bear are contingent on the earnings of the corporation. They need not be paid unless the earnings are sufficient, and a lapse in their payment will not precipitate the failure of the corporation. In this sense preferred stock and income bonds are contingent securities, and the dividends and warrants they bear represent contingent charges.

¹¹ This was the method pursued in the reorganization of the St. Louis and San Francisco Railroad in 1916. The important use of income bonds—on the whole an obsolete practice—is only one phase of an altogether stupid plan of reorganization. For, historical precedents and business expedients considered, the reorganization plan of the St. Louis and San Francisco Railroad shows the least insight and intelligence of any of the great railway reorganizations of the last decade.

When it comes to the manner of treating those layers of junior securities upon which the interest charges were not earned, by any subterfuge of accounting, there is now almost complete unanimity of judgment. They are invariably refunded into preferred or common stock. In large railroad and public utility reorganizations they are refunded into preferred stock bearing, ordinarily, non-cumulative dividends equal to, or possibly one per cent higher than, the fixed charges on the old bonds.¹²

In industrial reorganizations these junior bond issues, upon which the interest charges were not earned prior to the failure are usually refunded into common stock. In fact one very wholesome characteristic of industrial reorganizations, as a class, is the willingness of reorganizing managers, forced, to be sure, more by necessity than choice, to reduce and, if possible, eliminate, both the contingent as well as the fixed charges. There is a tacit acknowledgment that an industrial enterprise, especially one that must rehabilitate its credit, should have few direct or indirect liens upon its earnings.

METHODS OF PROCURING NEW MONEY

Less, by far, need be said concerning the treatment of bonds in securing the other purpose of practically every reorganization—the procuring of new money. Although this is often the

crux of the reorganization—quite generally it is so in an industrial reorganization—yet its burden almost always falls on other interests than the bondholders. In railroad and public service reorganization plans this burden falls on the stockholders who are forced to subscribe new money or suffer the extinction of their equities through the foreclosure of the bonds and the judicial sale of the corporate assets. In industrial reorganizations the burden of supplying new money is often divided among the stockholders and the unsecured creditors—the latter being forced, as well, to fund their obligations into a preferred stock.

But bonds are not always free from the necessity of supplying at least some of the money required by the reorganization. If the amount of money required to settle with the various creditors that need it and to rehabilitate the weakened credit of the corporation is more than the reorganization managers believe can be coerced from the stockholders, then they will assess the junior bondholders. It is purely a matter of expediency. If the new money cannot be obtained from the stockholders without running the danger of driving them away, then some of the burden must be passed on to the next higher layer of security holders. This is the junior bondholder.¹³ And

¹² This principle is succinctly stated in an often quoted passage from a circular issued at the time of the second reorganization of the Atchison, Topeka and Santa Fé Railroad. After stating that the amount of money to be raised amounted to \$14,000,000, the reorganization committee went on to say:

“The stockholders in the ordinary course should provide the whole of this amount . . . but the proportion of the assessment that would be borne by the stockholders could only

¹³ Securities bearing exactly this standing were the First and Refunding Mortgage 4s of the Wabash Railroad, the First and Refunding 5s of the Missouri Pacific Railway, and the Debenture 5s of the Chicago, Rock Island and Pacific Railway. In the recent reorganizations of these systems each one of these issues was refunded into a new preferred stock.

if, in turn, the junior bondholders cannot be counted upon to sacrifice very much to protect their equity, then at least a share of the burden may be passed on up to the senior bondholders.¹⁴ In some instances the bondholders are placed in the position of guaranteeing the assessments levied on the stockholders, so that if the latter default, the junior bondholders step

be gauged by the amount of assessment that they would be willing to pay in order to protect their rights. This amount is believed to be \$10 per share, and it is necessary that the second mortgage bondholders shall provide the remaining \$4 for their own protection."

into their position, pay their assessments and take the securities allotted to them. In some industrial reorganizations, too, the debenture bondholders find themselves forced to subscribe sufficient money to pay off certain preferred creditors in order to give themselves a controlling voice in the reorganization. Again, it is a matter of expediency.

¹⁴ This was the procedure followed in the reorganization of those small railroads (Class III enumerated in note 9 page 30) which required the foreclosure of the senior mortgage and the total extinction of all junior securities.

The Work of an Investment Banking House

By HASTINGS LYON

Attorney at Law, Lecturer on Finance, Columbia University

COMMERCIAL AND INVESTMENT BANKING

Difference in Matter

Commercial Banking.—Let us first differentiate the work of commercial banking from that of investment banking. The commercial banker is engaged in financing the circulating capital of business enterprise. His control over capital is subject to certain very strict limitations. Most of it might be called a delegated control subject to revocation without notice. Though he may direct capital into certain channels he must be able to withdraw it quickly, if necessary to satisfy the demands of his depositors who have vested him with control over capital under the condition that they shall be able to revoke that control on demand and resume it for their own purposes. Therefore, the commercial banker who is conducting his business with careful regard for his obligation to repay depositors on demand, properly loans on the security of commodities or goods in the process of consumption which, as they enter into consumption, automatically provide the means for liquidating the loans of the commercial banker. He may, to be sure, make loans on the collateral of fixed capital securities, but only as by reason of their enjoying a quick market they possess the quality of ready liquidation in sale which affords the equivalent of liquidation through the processes of consumption. It should be noted too that this

loaning on security collateral takes place only after some one else has directed the capital represented by the securities into the enterprise on which the securities are based.

Distribution of Surplus Capital.—This shows the matter of commercial banking from the viewpoint of the commercial bank. Look at it for a moment from the viewpoint of the borrower from the commercial bank. A certain part of the capital of a business enterprise is required through the entire year and from year to year. Another part of the capital needs of any business varies from month to month. The inventories of a manufacturing concern, for example, have their peak and their valley. In addition to the raw material goods in process and finished product, the management of the enterprise must finance goods sold and delivered but not yet paid for. Seasonal variations cause this capital requirement to fluctuate widely. A business must render a return for its use of capital. Stated another way the cost of capital is an essential part of the cost of production. If it is possible to avoid paying for a whole year's use of capital, the actual use of which is required for only part of the year, that is good business. The capital which gives rise to these seasonal variations is that very circulating capital which by reason of its steady consumption is constantly providing the means to liquidate loans by which it may be financed. So the complex

development of our economic life has given rise to this nice adjustment, which is really an economy, providing the ability to shift the control over capital quickly from the place where, for the moment, it is not needed to the place where, at the moment, it is imperatively needed.

But any business enterprise has certain capital requirements which do not diminish through any natural seasonal variation. The land, the factory building, the machinery in the factory—when the capital committed to an enterprise takes these relatively enduring forms it remains a fixed quantity. Even though the plant or some part of it is idle for a time, and even though this idleness may be of periodical recurrence, we have devised no means of effecting a capital economy here. The capital is not fluid, but fixed, and we must count it a capital cost through the entire year, and year in and year out, whether we actually use it continuously or not. Besides having this capital which is “fixed” by reason of its physical aspects, a business enterprise has a certain minimum amount of circulating capital which, by reason of its constant quantity, gives rise to the same financing requirements as that part of the capital which is physically permanent. That is, in a manufacturing enterprise, for example, the inventory of raw material, work in process and finished product and the accounts receivable, all of which present a requirement for the financing of circulating capital, reach a minimum at some period of the year. Though in its physical quality this is circulating capital, or its representative in accounts receivable, the permanence of its quantity gives rise to the same

financing problem as the physically fixed capital assets of the business.

Investment Banking.—Here lies the field of the investment banker, in financing the capital requirements of business which are not subject to seasonal variation, principally the fixed assets which are not self liquidating through the rapidity with which they enter into consumption, but also that part of the circulating capital which, though constantly entering into consumption, is, by reason of its fixed quantity, not self-liquidating. By the term “self-liquidating,” of course, is meant furnishing the means for prompt repayment of the principal committed to the financing.

DIFFERENCE IN METHOD

Besides this fundamental difference in matter, a fundamental difference in method should be observed as between the work of the commercial and the work of the investment banker. The depositor in the case of the commercial banker has no choice in the risks to which his capital is committed. To offset this the commercial banker's own capital forms a guarantee fund which assumes the first hazard in all risks. The person committing his capital to an economic undertaking through an investment banker has a choice in his risk and the investment banker's own capital is in no way pledged to indemnify him, the investor, in the event of loss.

THE INVESTMENT BANKER AND PRIVATE ENTERPRISE

Without going further into the comparison of the commercial and the investment banker, which has been made only as a means of defining the

scope of the investment banker's activity, let us now consider the mechanism by means of which capital, not required in their own economic undertakings by those who have control over it, is committed to economic enterprise under the management of some one else. The entrusting of capital to the management of another is an essential element in the idea of investment as the word is commonly used, and hence the term investment banker as describing those through whom this commitment is made in the financing of the fixed capital assets of business.

The Field of the Investment Banker

In the process of this commitment the investment banker uses his own capital as a means of clearance. He is a merchant buying on his own account with the risk of the transaction on him, not a broker performing a service only. The investment banker buys securities and sells them. Since his capital is not unlimited and his transactions are large he must arrange for credit. Yet the legal and business exigencies surrounding each transaction are such that credit is seldom extended to him by the vendor. Offsetting this fact is the fact that he seldom extends credit to the purchaser from him, the investor. But he must arrange loans to carry his goods, the securities in which he deals, until he sells. The method of doing this requires some description.

The Method of the Investment Banker

Distribution of Investment.—When the investment banker has committed himself to the purchase of an issue of securities, or even before actually making the commitment, he proceeds

to shift a large part of his risk as rapidly as possible. He forms an underwriting syndicate of investment bankers which assumes the entire risk of the transaction. He will retain such part of the risk as he desires or cannot shift by becoming himself a member of the syndicate of which he will be the manager. Though sometimes the members finance the carrying of their respective participations, more commonly the banker who has initiated the entire transaction arranges for the loan to carry the entire issue. To this end he seeks the commercial banker. For the purpose of the commercial banker the securities now in the process of distribution are like commodities entering into consumption. By reason of the market the investment banker is engaged in making, it is anticipated that the transaction will itself provide the means of liquidating the loan. Though there is not the same assurance that this will be the case as there is with a loan based on standard commodities, as food and clothing, or goods consumed in the necessary operations of our economic life, the consumption of which is imperative to human existence in the established social form, nevertheless, loans of this kind have become in financial centers a well recognized part of the business of those banks which have hitherto been designated in this article as commercial. Bank operations of this kind based on investment securities, whether in aid of the investment banker or the stock exchange broker, are sometimes called financial banking to distinguish them from operations based on tangible goods to which the term commercial banking would be more strictly applied.

Shifting the Risk.—Even though the

investment banker has shifted the risk of the transaction by forming an underwriting syndicate he may pledge his personal credit for the loan and put up the syndicate agreements as collateral along with the securities themselves. With the loan all arranged in this way the transaction is now ready for the "clearance," that is, for the payment of the purchase price to the issuer, the issuance of the securities and the delivery of them to the bank to be held as collateral. The precise form of the business varies a great deal with the nature of the transaction and no adequate inclusive general description can well be given.

There may well be a further shifting of the risk before this clearance operation. If the transaction has gone far enough, assumed sufficiently definite form, the underwriters may proceed to sell subject to the condition of "when, as and if issued and delivered." The securities may even be advertised in the press and by circular this way. When the advertising takes the form of an announcement of an offering for public subscription, and the subscription books are closed within an hour or two of their opening it need not always be assumed that an eager public has rushed in of its own accord. The probabilities are that a large amount of selling work was done before the subscription announcement.

How the Investment Merchant Buys

Investigation of enterprise.—In our description of the work of the investment banker we have followed one thread of the warp further than some of its parallel threads. So far we have followed the thread of distribution. How does the merchant of investments

buy the goods he sells? Sometimes an investment banker assumes the work of a promotor, assembles from the very beginnings the elements of an enterprise and follows it through its construction stage to its demonstration of an earning power. We will consider his work, however, only in relation to an enterprise already established. Those in control of such an enterprise seek the banker, usually, because they want to increase the business and in order to do so need to add to the capital account. Sometimes for one or more of various, good and sufficient reasons those in control wish to withdraw from the business, to sell out, and, since by reason of the magnitude of the enterprise the number of possible private purchasers is so small as to be negligible, they seek to sell to the investing public through the jobbing banker. The banker stays in business, however, through a reputation for the quality of the goods he sells. He must investigate and test his goods before adding them to his stock. He must test for earning power as being the quality which will provide dividends for stockholders, and interest and the provision for the repayment of principal for bondholders. He must consider the liability of this earning power to fluctuate depending on the kind of business involved as affecting the capacity of the enterprise to meet fixed charges and afford a probable continuity of preferred dividends. He must test the value of the assets, the cost of reproduction less depreciation. The business makes its earnings by reason of creating a value of some kind, a value of place, a value of form. How much of this added value is attributable to the use of capital, and how

much, therefore, of the earnings is capital likely to be able to continue to command.

Earnings and Income.—Though the banker must depend on his own judgment in making a purchase of securities, he needs facts and the judgments of expert technical knowledge on which to base his judgment. So when considering the merits of an enterprise as a basis of investment he calls in experts for several lines of technical investigation. We will assume that the enterprise is industrial. The banker needs to know the facts about earnings. The management of the corporation may be perfectly honest in its representations to the bankers and still state earnings incorrectly because themselves mistaken. Accounting practices are by no means universally sound. So, as a check on possible wilful misrepresentation, but more probable unintentional inaccuracy, the banker requires the audit of expert accountants running over such a period of years as may be considered sufficient to guard against a commitment based on exceptionally favorable earnings for a single year.

Value of Assets.—Though income is the first consideration, the value of assets is also highly important. If the employment of capital in the enterprise is unduly small in relation to the earnings, apparently elements other than capital contribute principally to the income, as management, or some especially favorable but probably not really permanent condition. Question may well arise as to the value of capital committed in the absence of the especially favorable element. What would the assets be worth to some other competent management? As an as-

surance of the probable continuity of income available to capital and of a liquidation value, in the event of some weakness that may develop in the management of the enterprise in its present form, the value of assets must be taken into account. So the banker needs an appraisal of the tangible assets. The auditors have passed such judgment as is possible on the value of the intangible assets, the bills and accounts receivable. The judgment is perhaps not based on very profound investigation, but it is the best practicable.

Appraisal of Materials.—The auditors, however, who are skilled in accounts, have no basis for judgment of the tangible values on which those accounts are largely based. So, both for the purpose of supplementing and enabling a check on the deductions drawn from the audit, the bankers have an appraisal made. This appraisal may be made simultaneously with the audit, and its results, or more especially the appraisal of the inventories of material, goods in process and finished product, taken advantage of in completing the report on the audit. So far as the fixed capital assets are concerned the appraisers estimate the cost of reproduction and deduct a proper allowance for depreciation. Such an appraisal, of course, leaves out of consideration special increases or decreases of value due to location or other causes than costs, but as these special advantages or disadvantages are reflected in earnings this is not of consequence. The appraisal serves the purpose for which it is taken.

The cost of reproducing the plant may be a certain amount, yet the plant may not be advantageously arranged

for operating purposes. The banker needs the opinion of a competent engineer on this matter. Such an opinion completes the list of expert investigations ordinarily made.

Investment Merit.—To the facts as ascertained by these expert investigations the banker must add the more general facts in forming his judgment of investment merit. He must consider such matters as whether the general geographical location is and will continue to be advantageous, the ability of the management, whether the enterprise is large enough to hold its own in the industry, the labor element, in short, the entire set of general business considerations.

Kind of Securities to Be Issued.—Before these investigations are undertaken the financing bargain has been made, that is, an agreement reached as to the kind and amount of securities to be issued and the price to be paid for them. This is done on the basis of representations by the management of the enterprise. The investigations are made to substantiate these representations, and the financing bargain is made conditional on this substantiation.

In arriving at the financing bargain the management and its attorneys and the bankers and their attorneys all have a part. The management of the enterprise and the bankers state the results they wish to arrive at and, in a general way, the means. The attorneys indicate how far these results and means are legally practicable. In this way the bargain is made which includes as part of its terms the form of security to be issued. The experts proceed with their investigations, which we will assume do substantiate the representa-

tions of the management. The attorneys proceed with the legal matters necessary to carry out the bargain. The bankers go ahead with their preparations for the ultimate distribution of the securities. This involves the formation of the syndicate, as already indicated, the preparation of the circular and any other matters looking forward to the final offering of the securities to the investing public.

The Sale of Securities.—The preparation of the circular and other advertising matter is by no means an unimportant part of the work antecedent to the sale of the securities. Statements made in the circular constitute the representations on the basis of which the securities are sold. Every care must, therefore, be taken to have these statements accurate. The banker's reputation, to say nothing of legal liability, depends on their accuracy. Yet, naturally, the circular should make as good a showing for the business as consistent with the facts. If there are any faults, however, they are likely to be faults of omission rather than of commission.

We will not undertake to describe the processes by which an investment banker develops the clientele which is the foundation of his business. The forming of business connections through the agencies of the salesman, through personal relationship, and through such value as the printed advertisement, may follow a course for investment banking fairly similar to that for any other form of business enterprise. The problem is especially difficult in that the thing which the investment banker has to sell consists of intangible values.

THE INVESTMENT BANKER AND PUBLIC FINANCE

For the sake of clarity in the particular description, we have so far confined ourselves to the work the investment banker performs in directing investment in private enterprise and have neglected his relationship to public finance. The community acting in its organized capacity as the sovereign state, including the municipal agencies of the state, makes its primary provision of funds substantially in two ways, by taxation and by borrowing, that is, the enforced levy and the voluntary loan. Though the funds may be provided in the first instance by the voluntary loan the repayment of the loan and, therefore, the ultimate source of the funds lies in the enforced levy.

Public Loans

The loan is properly resorted to as a source of immediate funds for such extraordinary expenditure that to levy for the whole amount would interfere with the economic functioning or productive power of the community. Two men equally able to pay in the long run may differ very widely in their ability to make immediate payment. One man may, without interfering with his productive power, part with his private control over capital to many times the amount of another man of equal worth. If an immediate tax levy would seriously interfere with the productive power of the other man, it is a matter of expediency to borrow part of funds immediately required on such terms as make it advantageous to those members of the community whose wealth is of such a nature that they can part with con-

trol over more than their proportionate share for tax purposes without interfering with their productive power. It may be remarked that no element of patriotism is involved in the transaction which would make it praiseworthy to loan to the government on terms less advantageous than a good bargain to the lender. The ultimate beneficiary is not the government but the taxpayer who is not in a position to part with his proportion of the necessary funds without too seriously impairing his economic efficiency. During the recent war the investment bankers of this country contributed their services in the flotation of the government loans. They not only made no profit but also suffered a positive loss through their running expenses. There was no more reason why they should contribute their services without pay and suffer the loss of their operating expense than that the maker of munitions of war should do the same thing.

The Investment Banker a Merchant of Credit

Ordinarily the investment banker acts as a merchant of credit in the case of government and municipal loans just as he does in the case of the financing of private corporations. In the case of the private corporation, however, the sale to the banker is a private sale, that is, the corporation does not offer its securities generally to whoever will come and buy, but privately seeks a particular banker, and if unable to do business with him seeks another. The regular course of business with public securities, however, is to offer them publicly to the highest bidder. If the banker seeks to buy he must

take what is offered. He does not have the opportunity he has with the private enterprise to take part, and usually much the greater part, in shaping up the investment contract expressed in the security. Since public securities rest on the taxing power as the one form of provision for payment, and usually all the issues have exactly the same claim on the taxing power, the opportunity for variation in the investment contract is confined to purely formal matters of the security, as the term and rate. So the lack of opportunity to take a part in the shaping up of the issue is not as disadvantageous as it would be in the case of securities of private corporations.

Public Sale of Securities

The business of financing the municipalities is highly developed and the fact of the public rather than the private sale by the issuer of the securities makes some fundamental differences. Since the purchaser does not know that he is to get the securities until it is time also for him to pay the money for them, there is not the same opportunity to shift the risk. Any syndicate formed before the purchase and payment is a joint account rather than an underwriting syndicate, that is, a joining in the risk as a primary purchaser rather than taking an assumption of the risk as a secondary purchaser. The same reason prevents any shifting of the risk to the investor before the time of payment. Since the purchase is uncertain it is not worth while to undertake the work and the banker has really nothing to offer.

Another respect in which the purchase of municipal securities differs from purchasing securities of private

corporations lies in the lack of special independent investigation, other than legal, in the case of the municipal security. It is in the nature of the transaction that the vendor's statement of assessed values and of financial position should be accepted by the purchaser. The purchaser does not, however, accept the legal proceedings as being necessarily adequate. The legality of the issue of municipal securities is so highly technical a matter that the investment banker always requires an independent report on legality, and the importance of this is indicated by the large percentage of cases in which the municipal bond attorney detects some flaw in the proceedings which requires remedy.

CREATION OF INVESTMENT MARKET

This description of the work of an investment banker has confined itself to his business as a merchant in credit. He has one function which the merchant in ordinary commodities does not have. The ordinary commodity goes its straight course direct to consumption. A security, however, is not consumed in use and the financing of it is, therefore, not liquidated in the consumption process. The only way in which the investor can liquidate a security with a long term still to run, or without maturity, as stocks, is to put his investment in the market again. A very considerable part of the economic service performed by the investment banker consists of his creation of this market. The processes by which it is created, through brokers, through telephonic, telegraphic and mail inter-relationships among the banking houses, through the medium of the organized exchanges, through

direct dealings with the bankers' own clientele are all matters that would require another article for telling. It is enough to say here that liquidity in sale is an important element of eco-

nomic value, and this value, when present, is one of the creations in one form or another of the investment banker.

United States Government Bonds

By C. FREDERICK CHILDS

President, C. F. Childs and Co., New York and Chicago

THE NATURE OF GOVERNMENT BONDS

A GOVERNMENT bond is primarily a loan which the legally constituted national authorities covenant and promise to pay on a specified date. Being, therefore, the obligation of a nation, such a bond represents a form of credit of the utmost superiority. The bond of a government presupposes that the nation borrowing the money is entitled to the accommodation which it seeks, and does so in unimpeachable good faith and integrity for the welfare of its people. When founded upon the strictest observance of all past commitments and supplemented by the lender's recognition of the standing of the borrowing nation and its estimated resources, the obligation is entitled to the fullest confidence on the part of foreign, as well as domestic investors.

A national loan should not be regarded as in the same class with a state, municipal or corporation bond, since the debt of a government supersedes all obligations of any minor political body or subdivision. Even the sacrifice of the credit or solvency of any municipality is of small importance when the financial standing of the sovereign state is at stake. In the latter case the faith and credit of the entire nation and all its units and peoples is pledged to honor its obligations, and taxes may be levied accordingly without regard to the needs or sacrifices of any subordinate community or corporate body. A na-

tional loan is therefore a veritable mortgage on the integrity, wealth and taxable assets of the entire population, and when such a loan ceases to be safe, then no other known security or investment based upon property within that nation will have any dependable market value. The default of a national obligation would be an absolute calamity to the entire commercial structure and credit of its people, and the money of such a nation would become virtually worthless. No such situation, therefore, is conceivable in the case of the United States Government and its bonds. The government's power to control all the resources, wealth and productivity of the nation, coupled with unlimited powers of taxation, constitutes the economic vitality of the nation in support of any desired credit.

NATIONAL FINANCE

History records that a liberal application of taxation is the surest method of marshalling national resources for the successful financing of every great national calamity or crisis. The records of the Napoleonic Wars indicate that at that time over 40 per cent of the cost of the wars was paid by direct taxation. At the close of our Great War just ended, it was estimated that taxation was producing about 35 per cent of the actual daily cost of the war. In consequence, it becomes apparent that submission to such sacrifices on the part of a nation's citizens

makes its government capable of fulfilling any duty necessary to honor its debts. Responsive patriotism to a like degree assures the government that public support will safeguard all its accompanying moral and financial obligations.

WEALTH, DEBT AND INCOME OF THE UNITED STATES

Before the United States entered the late war our net national debt was approximately \$1,000,000,000. The gross cost of the war to the United States up to June 30, 1919, was computed by the Secretary of the Treasury to have been \$30,177,000,000. To meet the treasury's needs to conduct the war and its unprecedented expenditures, there were issued and sold to the public \$16,978,356,250 bonds and \$4,500,000,000 notes. Also various other obligations were incurred, notably War-Savings Stamps and Certificates and serial issues of short term Treasury Notes sufficient to make the gross debt of the United States up to June 30, 1919, total \$25,484,506,160. To better appreciate the significance of such figures, the contrast between the estimated wealth, net debt and annual income of the United States might be shown in round numbers as follows:

Wealth . . .	\$300,000,000,000
Debt	\$20,000,000,000
Income	\$50,000,000,000

By an obvious analysis of these figures, the net debt of the government is only about 40 per cent of our country's income for one year. Similarly, if we assume that the government's yearly rental or interest charge for the use of the money represented by the loans averages $4\frac{1}{4}$ per cent on the bonds and $4\frac{1}{2}$ per cent on the notes, it is evident

that our income is equivalent to about fifty-six times the interest requirements on the national debt. By comparison, the average corporation bond purchased by investors shows earnings of only about two to five times the interest charges.

Although not generally realized, our financial burdens today are not altogether disproportionate to those immediately following the Civil War. A comparison of the data indicates that the debt of the United States after the Civil War was \$80 per capita, or $10\frac{1}{2}$ per cent of our national wealth. Today our debt is about \$275 per capita and the percentage of our debt to our national wealth is now about 10 per cent. The tremendous increase in our wealth during the last fifty years, coupled with the general prosperity which has accompanied the marked development of our resources recently, does not indicate that our present burdens are so difficult to bear as was the weight of the Civil War debt.

AMOUNT OF GOVERNMENT BONDS OUTSTANDING

Without reference to the bonds which were outstanding prior to the year 1917, there was issued and sold, within approximately two years from April 2, 1917, the date of our entrance into the war, \$21,478,357,250 Liberty Loans, of which amount \$4,500,000,000 were designated as Victory (short-time) Notes. All were sold at par, as the several different issues were announced, direct to institutions or individual investors through an organization of volunteers under the direct supervision of the twelve Federal Reserve Banks. The districts allotted to each Federal Reserve Bank, covering the

entire United States, were subdivided into state, county, city and town organizations so that every individual throughout the entire country was directly or personally appealed to for subscriptions up to the limit of his financial ability. These intensive campaigns by personal solicitations, which were conducted, without salary compensations for the most part, by bankers and experienced bond salesmen, were supplemented with literature, posters and advertisements issued by the treasury department.

Date of Various Loans

The emission of the various loans was made as follows, and the campaigns necessary to complete subscriptions for the amount of each loan were usually extended over a period of about thirty days:

<i>Loans</i>		<i>Offered</i>	
First Liberty	3½s	May	14, 1917
Second "	4s	October	1, 1917
Third "	4½s	April	6, 1918
Fourth "	4½s	September 28,	1918
Victory Liberty 3½s and 4½s		April	21, 1919

The 3½ per cent and 3¾ per cent loans were made absolutely exempt from all taxation both as to principal and interest during their life, whereas the 4s, 4½s and 4¾s were given specific and different tax exempt characteristics. To the 3½s and 4s was attached the privilege of conversion into the 4½ per cent rate and to the 3¾s and 4¾s were given convertible and reconvertible privileges. Under the various acts of Congress authorizing the 4 per cent, 4½ per cent and 4¾ per cent loans, different privileges of tax-exemption were granted and applied to certain limited amounts of bonds provided they were

originally subscribed for or later purchased by investors in the open market. These made it possible for a holder of a maximum amount of \$160,000 bonds, consisting of a combination of the different issues, to have the income thereof tax-exempt for a period of time ranging from two to five years after the formal declaration of peace by the President of the United States.

The maximum face amounts of the different United States issues of Liberty Bonds, exclusive of holdings of 3½s and 3¾s which an investor may hold, still obtaining exemption from taxation on all the resulting income, may be tabulated as follows:

\$5,000 in the aggregate of First 4s, First 4½s (issues of May 9, 1918, and October 24, 1918), Second 4s and 4½s, Third 4½s, Fourth 4½s, Treasury Certificates, and War-Savings Certificates.

30,000 of First 4½s (issue of October 24, 1918, only), until the expiration of two years after the termination of the war.

30,000 of Fourth 4½s, until the expiration of two years after the termination of the war.

45,000 in the aggregate of First 4s, First 4½s (issue of May 9, 1918, only), Second 4s and 4½s, and Third 4½s, as to the interest received after January 1, 1918, until the expiration of two years after the termination of the war—this exemption conditional on original subscription to, and continued holding at date of tax return of, two-thirds as many bonds of the Fourth Liberty Loan.

\$110,000 Total possible exemptions, subject to conditions above summarized. Under the terms of Section 2 (a) of the Victory Liberty Loan Act, the following additional exemption becomes immediately effective, and is independent of any subscription to the Victory Liberty Loan.

\$30,000 in the aggregate of First 4s, First 4½s (issues of May 9, 1918, and October 24, 1918), Second 4s and 4½s, Third 4½s, and Fourth 4½s, as to the interest received on and after January 1, 1919, until the expiration of five years after the termination of the war. Under the terms of Section 2 (b) of the Victory Liberty Loan Act, the following additional exemption is provided, conditional upon original subscription to, and continued holding at the date of the tax return of, one-third as many notes of the Victory Liberty Loan, and extending through the life of the notes of the Victory Liberty Loan instead of expiring five years after the termination of the war:

\$20,000 in the aggregate of First 4s, First 4½s (issues of May 9, 1918, and October 24, 1918), Second 4s and 4½s, Third 4½s, and Fourth 4½s, as to the interest received on and after January 1, 1919.

\$160,000 Total.

MARKET VALUES OF THE DIFFERENT ISSUES

The market value of the several different loans is subject to the daily vacillating sentiments of the present holders and prospective buyers. Every condition of local or foreign significance has a direct bearing upon the market which, however, is primarily governed by the supply and demand. When it is realized that prior to the war there were approximately four hundred thousand recognized bond buyers in the United States, and that, impelled by patriotic motives and drastic solicitation, fully twenty million people of this country were successfully induced to subscribe for the War Loan Bonds, it is not surprising that a large percentage of the subscribers should endeavor to liquidate their bonds by

selling them in the open market as soon as the war ended. In consequence, the supply of bonds tendered for sale greatly exceeded the demand of investors who were ready to add to their holdings by purchasing additional amounts. The result naturally produced a constantly declining market. As a means of forestalling a precipitate decline, and for the purpose of constantly supporting and steadying the market, the most potent factor was the War Finance Corporation which possessed adequate powers and means for functioning in that capacity for the government. Its daily purchases and sales frequently totaled several million dollars par value of bonds. Similarly (and most effectively) the operation of the government sinking fund was arranged to retire and cancel a proportionate amount of \$18,000,000,000 bonds annually during a period of twenty-five years. For the annual sinking fund to extinguish the principal in addition to the funds necessary to meet the interest on the bonds, \$417,861,532 will be required, or 2.32 per cent of the respective amount of Liberty Loan Bonds outstanding.

Up to the present writing the following prices show the lowest level to which the different loans have declined since their issuance:

			Low Recorded Quotation
First	Issue 3½s.	.....	97.20
First	" 4s.	.....	92.20
Second	" 4s.	.....	92.10
First	" 4½s.	.....	93.90
Second	" 4½s.	.....	92.70
First-Second	4½s.	.....	94.80
Third	" 4½s.	.....	94.00
Fourth	" 4½s.	.....	92.70
Fifth	" 3½s.	.....	99.28
Fifth	" 4½s.	.....	99.28

Owing to the fact that the chief influence attracting buyers of bonds bearing as low a rate as government loans is the tax-exempt feature (exclusive of any patriotic consideration), it is manifest that the $3\frac{1}{2}$ s and $3\frac{3}{4}$ s, which are totally tax-exempt would be selected for purchase by individuals or institutions of large wealth who would otherwise be subject to heaviest taxation under the Income Tax Law. Therefore, these two issues virtually stand alone marketwise on their merits. With respect to the 4s which are now convertible at any time into a $4\frac{1}{4}$ per cent rate and also all the $4\frac{1}{4}$ per cent issues, there does not exist a sufficient distinction in their accompanying taxation features to justify any comparative difference in their market value. Therefore, the principal variance in their quoted prices is primarily based upon their different maturity dates, coupled with the fact that there is a marked difference between the amount of bonds outstanding. In general, all $4\frac{1}{4}$ per cent bonds should be quoted on a parity basis of income yield so that a ten-year bond and a twenty-five-year bond should sell at prices to yield the same net return. However, as long as the vast number of public holders of these bonds are unable to comprehend or to act with appreciable discrimination, but instead select for purchase or sale one issue instead of another without reference to this technicality, it is not probable that any factor except that of supply and demand will exercise any considerable market influence over prices until the greater portion of bonds are lodged in the hands of discriminating investors. As a general rule, the most inexperienced investors select by preference short,

rather than long time maturities. The two different issues of First $4\frac{1}{4}$ s afford another conspicuous example of a notable price difference. Both of these bonds exist as the result of converting a $3\frac{1}{2}$ per cent bond into the $4\frac{1}{4}$ per cent rate under two different Acts of Congress. In the case of the First Liberty Loan Converted $4\frac{1}{4}$ s, issue of May 9, there are nearly \$380,000,000 bonds outstanding, whereas in the case of the First Liberty Loan Second Converted $4\frac{1}{4}$ s, issue of October 24, there are outstanding less than \$3,500,000. Bonds of the former loan are available in sufficient amounts to meet the demand and still be quoted at a substantial discount, but bonds of the latter loan, on the other hand, are scarce and virtually unobtainable in the open market, which fact causes them to be quoted at a premium when an occasional block of bonds becomes obtainable.

On the assumption that the government will not call the Liberty Loan Bonds for redemption at their optional date, but rather will allow them to run to maturity, the prices at which the different bonds should be quoted in order that a $4\frac{1}{2}$ per cent and 5 per cent income yield shall be obtained by the buyer are specified below. It is assumed that bonds bought January 1, 1920, will be retained until maturity:

		Price to	Price to
		Maturity Yield $4\frac{1}{2}$ %	Yield 5%
Liberty	$3\frac{1}{2}$ s....1947	84.31	77.71
	1st 4s....1947	92.16	85.14
	2nd 4s....1942	92.88	86.42
	1st $4\frac{1}{4}$ s....1947	96.08	88.86
	2nd $4\frac{1}{4}$ s....1942	96.44	89.82
	3rd $4\frac{1}{4}$ s....1928	98.17	94.62
Victory	4th $4\frac{1}{4}$ s....1938	96.83	90.87
	$3\frac{1}{2}$ s....1923	97.59	96.03
	$4\frac{1}{2}$ s....1923	100.80	99.21

CHARACTERISTICS OF

The principal characteristics of the ten different issues

UNITED STATES LIBERTY AND

	3½s	4s		
	1st LIBERTY LOAN 3½s 15-30 Year Bonds	1st LIBERTY LOAN— CONVERTED 4s 15-30 Year Bonds	2ND LIBERTY LOAN 4s 10-25 Year Bonds	1st LIBERTY LOAN— CONVERTED 4½s *Issue of May 9, 1918 15-30 Year Bonds
Present Status	Issued \$2,000,000,000. †Outstanding \$1,413,805,200.	†Outstanding \$198,865,200.	Issued \$3,808,766,150. †Outstanding \$860,365,100.	†Outstanding \$376,129,100.
Taxation Feature (Summary Below)	Exempt from all taxes (except estate and inheritance taxes).	Notes A, B, F and G.	Notes A, B, F and G.	Notes A, B, C, F and G.
Date of Issue and Maturity	June 15, 1917. June 15, 1947.	November 15, 1917. June 15, 1947.	November 15, 1917. November 15, 1942.	May 9, 1918. June 15, 1947.
Callable For Payment	Redeemable at government's option on or after June 15, 1932.	Redeemable at government's option on or after June 15, 1932.	Redeemable at government's option on or after Nov. 15, 1927.	Redeemable at government's option on or after June 15, 1932.
Interest Payments	June 15th and Dec. 15th.	June 15th and Dec. 15th.	May 15th and Nov. 15th.	June 15th and Dec. 15th.
Conversion Privilege	Convertible into any higher rate bond issued during the war (except short term loans) within six months from date of the issue of such higher rate bond. The date of the termination of the war shall be date fixed by proclamation of the President.	Convertible into the First Converted 4½s if application is made before Nov. 9, 1918. This privilege to convert has been extended and renewed.	Convertible into Second Converted 4½s if application is made before Nov. 9, 1918. This privilege to convert has been extended and renewed.	Not convertible into any future issue.
Sinking Fund	Note H.	Notes E and H.	Notes E and H.	Notes E and H.

Note A.—Exempt from state and local taxes and from normal income tax, but subject to estate, inheritance, super-tax, excess and war-profits tax on all incomes and earnings above the normal exemption (incomes from holdings of \$5,000 bonds are tax exempt except for estate and inheritance taxes).

Note B.—In addition to tax exemption in Note A, income from not more than \$45,000 bonds of this issue or a smaller amount of bonds of this issue not exceeding 1½ times the amount of the Fourth Liberty Bonds held by the owner is exempt until two years after the war from surtaxes, excess and war-profits taxes, provided said Fourth Loan Bonds were originally subscribed for and have been continuously owned by the tax payer up to the date of his tax return.

Note C.—Bonds owned continuously for at least six months prior to one's death are acceptable at par and accrued interest in payment of any estate and inheritance taxes imposed by the United States under any present or future law.

Note D.—In addition to the tax exemption in Note A, interest on not to exceed \$30,000 bonds of this issue is exempt until two years after the war from surtaxes, excess and war-profits taxes when owned by one individual, partnership, corporation or association.

Note E.—The Secretary of the Treasury is authorized from time to time until the expiration of one year after the termination of the war to buy bonds of this issue to the extent of 5% of the original issue during the 12 months' period beginning on the date of issue and in each 12 months' period thereafter to the extent of 5% of the amount outstanding at the beginning of the period, the average cost of bonds purchased in any such 12 months' period not to exceed par and accrued interest.

Note F.—In addition to the tax exemption in Note A, income received on and after January 1, 1919, on not to exceed \$30,000 bonds in the aggregate is exempt until the expiration of five years after the war from surtaxes, excess and war-profits taxes.

Note G.—In addition to the tax exemption in Note F, income received on and after January 1, 1919, on not to exceed \$20,000 bonds in the aggregate is exempt from surtaxes, excess and war-profits taxes, extending through the

DIFFERENT ISSUES

of Liberty and Victory Loans are set forth below.

VICTORY LOAN WAR BONDS

4½s				3½s and 4½s
1ST LIBERTY LOAN— 2ND CONVERTED 4½s	2ND LIBERTY LOAN— CONVERTED 4½s	3RD LIBERTY LOAN 4½s	4TH LIBERTY LOAN 4½s	VICTORY LIBERTY LOAN
<i>*Issue of Oct. 24, 1918 15-30 Year Bonds</i>	<i>10-25 Year Bonds</i>	<i>10 Year Bonds</i>	<i>15-20 Year Bonds</i>	<i>3-4 Year Notes</i>
Available by converting 3½s before April 24, 1919. Outstanding approximately \$3,375,000.	†Outstanding \$2,752,153,400.	Issued \$4,176,516,850. †Outstanding \$4,055,687,050.	Issued \$6,993,073,250. †Outstanding \$6,917,000,000.	Issued \$4,500,000,000.
Notes A, C, D, F and G.	Notes A, B, C, F and G.	Notes A, B, C, F and G.	Notes A, C, D, F and G.	Notes I and J. Note C, as to 4½s only.
October 24, 1918.	May 9, 1918.	May 9, 1918.	October 24, 1918.	May 20, 1919.
June 15, 1947.	November 15, 1942.	September 15, 1928.	October 15, 1938.	May 20, 1923.
Redeemable at government's option on or after June 15, 1932.	Redeemable at government's option on or after Nov. 15, 1927.	Not redeemable until maturity.	Redeemable at government's option on or after Oct. 15, 1933.	Redeemable at government's option on or after June 15, 1922, upon not less than four months' notice.
June 15th and Dec. 15th.	May 15th and Nov. 15th.	September 15th and March 15th.	April 15th and October 15th.	December 15th and June 15th.
Not convertible into any future issue.	Not convertible into any future issue.	Not convertible into any future issue.	Not convertible into any future issue.	The 3½s and 4½s are convertible and reconvertible each into the other after July 15, 1919, but before maturity or call for redemption.
Notes E and H.	Notes E and H.	Notes E and H.	Notes E and H.	Notes E and H.

life of the Victory Notes, provided such bonds do not exceed three times the principal amount of Notes of the Victory Liberty Loan originally subscribed for by such owner and still held by him at the date of his tax return.

Note H.—The Victory Loan Act created a sinking fund to retire all Liberty bond and note issues at maturity, or to redeem and purchase them before maturity at an average cost not to exceed 100 and accrued interest. Beginning July 1st, 1920, and for each fiscal year thereafter until all such bonds and notes are redeemed, there is appropriated for the purposes of the sinking fund an amount equal to the sum of (1) 2½% of the aggregate amount of bonds and notes outstanding on July 1st, 1920, less an amount equal to the par amount of any obligations of foreign governments held by the United States on July 1st, 1920, and (2) the interest which would have been payable on the bonds and notes purchased or redeemed or paid out of the sinking fund during such year or in previous years for which the appropriation was made.

Note I.—The 3½s are exempt both as to principal and interest from all taxation (except estate and inheritance taxes) now or hereafter imposed by the United States, any State or any of the possessions of the United States, or by any local taxing authority.

Note J.—The 4½s are exempt both as to principal and interest from all taxation now or hereafter imposed by the United States, any State, or any of the possessions of the United States, or by any local taxing authority, except estate or inheritance taxes, and graduated additional income taxes, commonly known as surtaxes, and excess profits and war-profits taxes, now or hereafter imposed by the United States, upon the income or profits of individuals, partnerships, associations or corporations.

* The two issues of First Converted 4½s differ only to the extent that the issue of October 24th is tax exempt as to the interest on not to exceed \$30,000 bonds regardless of one's subscription to the Fourth Loan, whereas the issue of May 9th is tax exempt as to the interest on not to exceed \$45,000 bonds in connection with one's subscription to the Fourth Loan.

† Outstanding January 31, 1919.

Above data revised to June 1, 1919.

Apart from these technical considerations, there are no grades or classes in the credit of our government, and the bonds of one loan of the United States are equal in safety with any and all other loans which our government has obligated itself to pay.

PRE-WAR BONDS

There are now outstanding seven different pre-war issues, three of which are suitable primarily as collateral security for National Bank notes, the remaining four being regarded as more or less suitable for public investment. They are classified as follows:

\$599,724,050	Consol 2s (payable at the pleasure of the government after April 1, 1930).
74,901,580	Panama 2s (redeemable at the government's option after August 1, 1916, and November 1, 1918, and payable August 1, 1936, and November 1, 1938).
11,250,000	Postal Savings 2½s (redeemable one year after date of issue and payable twenty years from date of issue).
50,000,000	Panama 3s (payable June 1, 1961).
28,894,500	Conversion 3s (payable January 1, 1946).
118,489,900	Old 4s (redeemable at the pleasure of the government after February 1, 1925).

The Consol 2s and Old 4s are the consolidated and refunded debts created during previous wars and national crises, and the Panama 2s were issued to defray in part the cost of constructing the Panama Canal. These three issues are now, for the most part, utilized by national banks and pledged in Washington to secure the issuance of national bank notes.

The Conversion 3s were created by refunding a certain amount of Consol 2s and Panama 2s acquired in 1914 by the Federal Reserve Banks at par. The new converted 3 per cent bonds were thereafter sold to the public.

The Panama 3s were issued primarily to complete payment for the cost of the Panama Canal, and the Postal Savings Bank 2½s were issued to encourage the purchase of a government investment on the part of small savings bank depositors, and more particularly foreign born laborers who otherwise would withhold their earnings from the banks.

As the Federal Reserve Bank Act, providing rediscount privileges for the benefit of all national banks also extends the bank note issuing privilege to Federal Reserve Banks (which was formerly granted only to national banks), it is not likely that any future refunding of the present Liberty Loans will result in authorizing any new issue having the bank note circulation privilege attached to them. Therefore, it is probably safe to assume that without this privilege, no future issue of United States Bonds can be sold, during the present generation at least, bearing as low a rate of interest as 2 per cent; and, furthermore, it is improbable that the outstanding 2 per cent bonds will be called for payment so long as they can be profitably utilized by national banks for securing circulation. A notable commentary on the value of the circulation privilege is the fact that the 2s and Old 4s are now quoted at 100¼ and 106½ respectively.

Municipal Bonds

By WILLIAM R. COMPTON

President, William R. Compton Company, Investment Bankers; President, American Trust Company, St. Louis

IN preparing this article upon the issuance of municipal bonds by states, counties, cities and other political subdivisions of the United States, it has been necessary to take into consideration limitations of space and time. The subject is so complex that it is utterly impossible, without writing volumes, to give a detailed and comprehensive outline of the theory and practical working out of the issuance of municipal bonds. In any consideration of this subject, or any phase thereof, it should be remembered that the present system of municipal financing is a typical illustration of the evolutionary process in which necessity and environment combine to produce a desired result.

DEFINITION AND CLASSIFICATION OF MUNICIPAL BONDS

A definition has been called the result of an attempt to condense volumes into one or two short statements—in this case a most unsatisfactory procedure. We may, however, characterize municipal bonds as the obligations—the promises to pay—voluntarily assumed, of definite governmentalities, and payable from taxes. Again, we may say that municipal bonds are the means through which improvements, whose benefit is of a public nature, are financed.

Municipal bonds may be classed in two or three ways, namely, according to the purpose of their issuance, or with

reference to the laws affecting their issuance, or from the standpoint of the community incurring the debt. Here we will discuss municipal bonds from the latter standpoint.

National Bonds

The term “municipal” has been diverted from its limited meaning to include that which pertains to any district, city, state or nation functioning as an independent body. Even as the bonds of a city are the obligations of an independently functioning body, or as the obligations of smaller governmentalities are classed as municipal bonds, so are the obligations of the federal or main government placed under the same heading. Each is voluntarily voted by the people, or by their representatives, and is payable from revenues derived from the people. The underlying fundamental concept is the same. The taxpayers voted the bonds of the nation when they voted favorably on the Constitution, endowing Congress with the power to authorize the issuance of federal bonds.

State Bonds

State bonds represent the transition between Federal and public bonds of lesser governmentalities, such as cities, counties, school districts, improvement districts, etc. In practically every state today a loan, pledging the faith and credit of that state, must be authorized and voted by a direct vote of

the people themselves, although in isolated cases the legislatures of states may have the power to issue bonds, their authority having been obtained from a constitutional amendment or, in the last analysis, by a favorable vote of the taxpayers of the state. Like the obligations of the federal government, state bonds need not have a specific tax levied for their payment, but may be paid from the general revenues of the state. More and more is it deemed proper to liquidate state loans, primarily, from certain specific revenues which the state enjoys, although, generally speaking, in the last analysis those loans are supported by the taxing power of the state.

County, City and Town Bonds

County, city, village and town bonds, practically without exception, are voted by the taxpayers themselves and are authorized by a favorable vote at an election held for that specific purpose. In the majority of cases, a definite, irrevocable tax, sufficient for the liquidation of the debt incurred, is levied against all taxable property at the time of the issuance of the bonds. However, as in the case of many state bonds, specific revenues of counties, cities, villages and towns furnish the primary means for the payment of debts incurred for revenue producing improvements.

School Bonds

School bonds are often issued by cities themselves and as such are direct city obligations. There is a second method, however, of issuing school bonds, namely, through the formation of a school district which may consist of an entire city or a part

thereof, or of the city plus adjacent territory. Whatever the component parts may be, the district itself is formed voluntarily by the taxpayers therein, according to the existing laws of their state, and in practically every state it is necessary that school debts be created by popular vote of those who will have to pay them. But in a few isolated cases the administrative body of the school district has the power to issue bonds without a vote of the people, being limited either as to the amount of indebtedness that may be incurred or else as to the amount of tax available to pay the total debt, which in effect is an estoppel of the issuance of bonds beyond a certain specific amount.

District Bonds

By far, the most important class of bonds in any discussion of obligations of minor municipalities, such as districts, is the class issued to finance improvements whose benefit is practically localized. This class of municipal bonds will be discussed later, but it may be noted here that the districts standing sponsor for the payment of bonds of this character are always formed with the approval of the property owners therein.

So far, two fundamentals of all municipal bonds have been emphasized; first, their voluntary assumption by the taxpayers, either through a direct expression or through an expression of the representatives of the taxpayers, and, second, their payment from taxes or other revenues derived from those who expressed their willingness to assume the indebtedness. A part of the taxes from practically every taxpayer goes to pay the prin-

cipal and interest of bonds issued by the community in which that person lives. No corporation, other than charitable or religious, and no individual having property, escapes. It has been remarked that the only certainties in the world are death and taxes.

METHODS OF FINANCING

Municipal Property Tax.—Any discussion of Municipal Bonds would be incomplete without a discussion of methods of payment. The majority of municipal bonds are payable from the collection of taxes levied upon property within the municipality creating the debt. Sometimes the taxes are collected by a levy on all of the property assessed; in other words, by an *ad valorem* tax levied in ratio to the assessed value of the taxable property—so many cents for each one hundred dollars assessed valuation. This tax is levied against all assessed property, real and personal, land and money. It is irrevocably levied simultaneously with the issuance of the bonds, and is pledged for the payment of principal and interest thereof and may be used for no other purpose.

Community Property Tax.—Many municipal bonds, especially those issued in late years, are payable only, in their last analysis, from the levy of a tax against the property embraced within the community. Bonds payable in this manner are termed *General Obligations* in contrast to *Direct Obligations*, the name applied to bonds payable by a direct *ad valorem* tax upon all taxable property within the issuing community. The so-called general obligation bond is usually issued for some special purpose or improvement,

and is payable from special taxes or from revenues derived from the improvement itself. Only when these funds fail or prove insufficient must the entire municipality, standing sponsor for the debt, assume its burden and liquidate the insufficiency from general revenues or from special taxes which may be levied. Examples of financing of this character are bonds issued for terminal facilities, for the improvement of streets, for waterworks purposes, for agricultural credits, and so forth. Summing up, it may be said that a general obligation bond is one not primarily payable from the taxing power of the community creating the debt, but actually payable, in its last analysis, in that manner.

Special Assessment Bonds.—The least known form of municipal financing is that of obtaining improvements, whose benefit is entirely local, by the issuance of bonds whose principal and interest are payable from a special tax levied upon the property benefited in proportion to the benefits that will accrue to the property taxed. This form of municipal financing is the result of conditions found, for the most part, in the middle west, although to some extent in other parts of the United States. The draining of lands not sufficiently rolling to carry off surplus rain water, the construction of levees to protect fertile lands from rivers and streams in their flood stages, the construction of roads to furnish at all times an outlet to the shipping point for products of the community, are causes which have called forth what is known as *Special Assessment* financing. This form of financing, although comparatively new, is sufficiently old to have proven its merit.

The majority of municipal bonds are evidences of debt incurred, presumably, for the benefit of all of the residents of a municipality. They are issued to finance the very purposes for which the municipal government exists. Often, however, there are communities and districts, not organized as one of the usual political subdivisions of the state, which, because of their location or the peculiar physical conditions obtaining, necessitate special financing in order to provide local improvements. Accordingly, these communities or districts are organized under Enabling Acts which exist in almost every state solely for the purpose of financing and constructing the proposed improvement. If the improvement is such that it will operate to the benefit of all of the residents of the community, then the statutes more often provide that the bonds issued to pay for the improvement shall be payable by a tax levied against all of the property in the district. If, on the other hand, the improvement is such that it will benefit one class of property owners more directly and in greater proportion than the remainder, then it is equitable and fair that the property thus benefited should pay the cost of the improvement. Consequently, there are in most of the states statutes which provide for the organization of a district or municipality for the purpose of constructing an improvement whose cost shall be paid by the property specially benefited. Bonds issued by those districts, which are payable by a tax levied against the property benefited and in proportion to the manner in which it is benefited, are known as *Special Assessment Bonds*, the most typical examples of which are

drainage, levee and road improvement district bonds.

Land in a district subject to overflow, or land which is poorly drained or has roads inadequate to allow the products thereof to be marketed readily, will be increased intrinsically in value if the necessary improvement is secured. The benefit to this land is direct and much greater than to any other class of property. It is obvious that the land should bear the burden of the cost, yet, it is equally apparent that, in order to provide an opportunity to secure the money for the improvement and at the same time furnish the necessary safeguards to the land owner as well as to the purchaser of the security, it is essential that many legal proceedings be performed and judicially confirmed.

METHOD OF FORMING BOND DISTRICTS

The method of the formation of a district and the steps necessary to be taken before bonds can be issued vary to some degree in the different states, but the idea is the same. Only a general theory of the procedure can be indicated here. The organization of such a district is accomplished either by a special act of the legislature or by compliance with a general act; but in either case the organization of the political subdivision is with the consent of those who will enjoy the benefit from the proposed improvement and will consequently bear the cost thereof.

After the formation of the district, plans for the desired improvement are formulated and adopted after their correctness has been established to the satisfaction of property owners. The cost of the improvement is estimated at the time the plans are made, and if the

proposed improvement is found to be too expensive, the project, of course, is abandoned; but it is generally known, before the district is organized, just about what will be the cost of the improvement. Then disinterested persons are appointed to go upon the land affected by the improvement and determine the benefits that will accrue thereto by reason of the accomplishment of the proposed improvement. The benefits, so estimated, are adjudicated to the satisfaction of the owners of the lands that will be benefited, and after the benefits have been so adjudicated and sufficient time has been given in which they may be attacked, they stand as an immovable basis for the financing of the district. Assessed valuations fluctuate, but benefits, once confirmed after their adjudication, cannot be lowered or in any way changed, except in rare cases where benefits against individual tracts may be changed, provided the change does not at all affect the total amount of benefits confirmed; *i.e.*, if any benefits are lowered, others must be raised proportionately so as not to affect the total. Throughout the procedure of the assessment and confirmation of the benefits, the property owners affected have ample time in which to appeal from the benefits assessed. Thus, when the benefits are finally confirmed it means that the confirmation comes after the interest of those affected has been entirely safeguarded. It is important, in connection with the assessment of benefits, to bear in mind that benefits are assessed with the consent of the property owners, or after it has been proven that their dissatisfaction is not justly founded.

When the benefits have been con-

firmed, the next step is to advertise for bids for the doing of the work, according to the adopted plans for the improvement. When the exact cost of the work has been ascertained, through letting a contract, a tax is levied to cover that cost. Time is given the property owners to pay their part of that tax in cash, and if they do not choose to do so, bonds are then issued to produce the money necessary to pay for the cost of the improvement. The bonds so issued are payable from the collection of the taxes levied against the property benefited, and in proportion to the manner in which the court has confirmed the benefits. The taxes, from which the bonds are payable, are irrevocably levied at the time the bonds are issued, and usually exceed the requirements for principal and interest by a safe margin. Taxes so levied are usually on a parity with taxes levied for state and county purposes and, in most cases, are collected in the same manner and at the same time as state and county taxes.

The creation of special assessment debts requires experience in municipal financing, as well as a knowledge of the needs and problems of the community affected, but when correctly and intelligently constructed, special assessment debts should be liquidated as promptly as direct obligation, general obligation, or other classes of municipal bonds. The administration in districts issuing special assessment bonds is generally as efficient as in other municipalities, because in such districts the largest property owners generally advocate the improvement and take a leading part in obtaining it and maintaining its efficiency. Volumes might be written on special assessment financing

since, although the idea is practically uniform throughout the United States, the technique of the creation of the debts varies so greatly in different localities.

MUNICIPAL BONDS A BAROMETER OF PROGRESS

Municipal bonds have been called the barometer of progress. They are indicative of the spirit of a community. As industrial development proceeds and as population increases, new facilities become necessary. Good roads or paved streets are needed, increased school facilities are demanded, court houses and city halls must be enlarged or built, waterworks must be established or extended, lands heretofore unproductive must be made to produce food and basic materials. All of these projects are usually carried through by the issuance of municipal bonds. The growing industries, the producing farms and the new homes all become the security behind the bonds. Municipal bonds, whether of the direct obligation, the general obligation, or the special assessment class, are a prior lien to all private obligations, and their prompt payment is dependent not on a small group, but upon the community whose welfare is irrevocably yoked to the maintenance of proper credit.

In concluding this statement on municipal financing, it is proper to mention the matter of *value received*. It would be folly to purchase any securities, the technique of whose issuance did not correspond exactly to that pre-

scribed by law, but it would be equally foolish to purchase municipal securities that were issued for other than a meritorious purpose, or for any purpose not calculated to benefit the community creating the debt. History furnishes but rare instances of a public community in the United States refusing to repay, with the agreed interest, that which it contracted to pay, and in return for which the proper value was received. Municipal financing, in its last analysis, rests upon the credit of a community, and the credit of a community is determined as much by its integrity and willingness to liquidate its debts as by its ability to do so.

It is well to remember that we in this country are in the initial stages of municipal financing. As life becomes more complex, as the demand for food and clothing becomes greater, and as the demand for the enjoyments of life becomes more pronounced, the creation of debts by public communities will be increased correspondingly; and with that increase we will discover new and improved methods of providing the necessary funds. Of late years practically all municipalities are adopting the method of paying their debts year by year, so an increase in the output of municipal bonds should not be alarming as the outstanding amount is constantly being liquidated. If I were asked to state the determining factors of a safe municipal bond, my experience would prompt me to say, a needed improvement, an honest community and a proper construction of the debt.

Railroad Bonds

By F. J. LISMAN

Of F. J. Lisman & Co., New York City

THE capitalization of the railroads of the United States is nearly twenty billion dollars, of which nearly two-thirds is represented by bonds and the balance by stock. Up to about ten years ago railroad securities formed the bulk of the transactions on the Stock Exchange, and the money invested in these securities was more convertible into ready cash than money invested in most other enterprises; in fact, previous to the formation of a number of our large industrial companies in 1900, railroad securities were substantially the only securities which enjoyed a broad market on the Stock Exchange.

The gross earnings of our railroad companies have doubled in every twelve or fifteen years. With this steadily increasing business, which grew beyond all expectations, the constant investment of additional capital is, of course, necessary. To provide for consolidation and this rapid expansion, additional mortgage liens were created, and thus ensued the complicated structure of securities resting on many of the older railway systems. Up to about 1890 the expansion of the transportation business had not been sufficiently visualized, and nearly all mortgages made were closely limited to the requirements of the corporations at the time of the creation of such mortgages. From 1887-90 several large railroad corporations were reorganized and new mortgages created, which did not provide one dollar of

additional money for expansion. This was the case in the reorganization of the Wabash, the Missouri, Kansas & Texas, the Atchison, Topeka & Santa Fé, and others. When the traffic grew these companies were unable to raise additional money by the sale of stocks or junior mortgages and in many cases went into bankruptcy because they could not get the necessary capital on fair terms.

Since 1900 mortgages have grown larger and larger. In 1898 the state of New York for the first time permitted the investment of trustees and savings bank funds in railroad bonds. Since that time a number of other states have followed this example. The laws of most states require that only such bonds are available as a legal investment for trustees and savings banks as are secured by mortgages, which are obligations of companies that have paid not less than 4 per cent dividends for a period of not less than five years on a capital stock which must not be less than one-third of the bonded debt. In other words, the limit of bonded debt recognized as being safe is a capitalization represented by about three-fourths of its capital value in bonds and one-fourth in stock. As a consequence of this legislation several of our larger railroad companies, like the Pennsylvania, the New York Central and the Baltimore and Ohio have executed what is known as an *open mortgage*, under which bonds may be issued from time to

time whenever the company may need money for the purpose of paying off prior lien bonds or for raising additional capital. The amount of such bonds outstanding, however, shall never be more than three times the amount of the outstanding stock of the corporation.

FORMS OF MORTGAGES

The art of drawing railroad mortgages has made progress in many directions. At first, mortgages were secured by deeds of trust similar in all respects to the real estate mortgages then in vogue. Gradually the needs of the situation evolved a different type of trust deed, and now some of these very formidable documents run up to one hundred fifty pages and more. Formerly the mortgage was given to an individual the same as in real estate transactions; now mortgages are executed to corporate trustees in practically every instance. The advantage of a corporate trustee is that it never becomes sick, nor dies. As many complicated questions may arise with the trustees, but there is a clause in every trust deed defining the duties of the trustee and holding the trustee harmless against everything except malfeasance or breach of trust. Whenever it is necessary to do so, bondholders, in order to assert their rights under a mortgage, must get together, because very seldom is the trustee required to take any action on any subject connected with the mortgage except at the request of holders of not less than one-quarter of the outstanding bonds. On the other hand, a majority of the bonds, in most cases, can direct the trustee to take action, that is, declare due the principal of a mortgage in case the interest or prin-

cipal is not paid when due, in case the property has not been properly maintained, or in case a receiver is appointed, etc.

The deed of trust generally contains provisions under which the corporations agree to maintain the property, pay promptly taxes, rentals, etc. It has been found in many of the recent reorganizations that the properties had not been properly maintained and that the equipment and other items had been allowed to deteriorate. Under the trust deed the trustee was not obligated, nor provided with funds for matters of this kind. This subject has been taken up by the Investment Bankers Association of America and discussed considerably at the annual meetings. Some method is being sought to keep the bondholders in closer touch with the conditions of their mortgaged property.

BONDHOLDERS' COMMITTEES

The bulk of railroad bonds are coupon bonds payable to bearer, hence after they have become thoroughly distributed it is extremely difficult to locate them. It is for this reason that the modern bondholders' committee has been evolved. Whenever companies get into trouble or whenever it is necessary for bondholders to combine for purposes of protecting their interests, a committee is formed. This committee is usually composed of representatives of one or more firms who distributed the bonds in question and of representatives of the large bondholders. These committees always request holders to deposit their bonds with some trust company under an agreement which gives the committee full power to deal with the de-

posited bonds as may seem proper.

The bondholders' deposit agreement, like the trust deed or mortgage, is also a document which has undergone considerable change to meet the decisions rendered by courts from time to time. The courts, in all cases, have interpreted the powers of a committee as powers in trust and have held committee members strictly liable as trustees.

As a rule, reorganization progresses much slower than is anticipated, due, largely, to protracted litigation which is frequently carried on by the defendant in order to gain as much time as possible, in the expectation that time will tire out the creditors or that financial conditions may improve in the meanwhile. Bondholders have felt in some cases that the committee was taking an undue length of time in which to accomplish its work and have brought suit for the return of their bonds. The courts have been inclined to hold that, whenever no definite time was mentioned, five years was a reasonable time to work out a situation, and that, generally speaking, bondholders should be entitled to the return of their securities if the committee has not achieved anything within that period.

DECLINE IN RAILROAD CREDIT

During the last ten years railroad securities have not been so popular as previously, and the decline in price has been due to the following reasons:

1. As money became dearer with the expansion of commerce, and later owing to the war, many prime bonds have declined in value commensurate with the rise in the value of money.

2. As restrictions and regulations of

railroads by the forty-eight state and federal authorities became more and the more complex and profits more and more circumscribed, investors felt that securities of corporations, whose profits are limited by public opinion and by law, were not a desirable investment.

3. The railroads, in order to educate the public to their needs and thus influence legislators, were compelled to announce their poverty broadcast and they thereby educated the investing class, also, on this subject.

4. The rising cost of labor and the fact that Congress and state legislators were trying to help labor get increased wages, and at the same time were not willing, presumably at the behest of another class of voters, namely, the farmers and shippers, to advance rates commensurately with increased wages and costs of material, is another cause of unpopularity.

5. The normal income tax and super tax imposed on railroad securities which are not being imposed on state and municipal securities accounts for further decline in price.

EXCESSIVE INCOME TAXES

The average bond buyer, averaging a large number of small bondholders and a comparatively small number of rich men, has probably an income in excess of \$30,000 per annum. If this income is derived from railroad and other corporation bonds it is subject to a tax of 13 per cent, hence—about one-seventh of the income must be paid over to the government. Naturally a bond buyer wants to be compensated for this tax by a greater return on securities subject to it. The tax on incomes above \$30,000 increases very rapidly.

An income of \$40,000 is subject to a tax of nearly 16 per cent.

An income of \$60,000 is subject to a tax of about 21 per cent.

An income of \$100,000 is subject to a tax of about 31 per cent.

An income of \$150,000 is subject to a tax of over 40 per cent, etc.

People with large incomes, therefore, can only afford to buy railroad bonds when compensated by an extraordinarily large return.

PENDING RAILWAY LEGISLATION

A bill is now pending before the Conference Committee of the two Houses of Congress, which is expected to be enacted into a law before this article is published. Under this law the railroads, which are to be returned by the government on the 1st of March to the corporations owning them, will be guaranteed the standard return or rental by the government for another six months, and during that period they will be requested to ask for an advance of rates which will enable them, as a whole, to earn sufficient money to pay their operating expenses, maintenance, taxes and a fair return on their value. This fair return may possibly be limited to $5\frac{1}{2}$ per cent, or it may be left to the discretion of the Interstate Commerce Commission.

Presumably, by a fair return is meant the income which will make the securities worth their face value under average conditions. With the enormous changes which have come over the world in every way, including the value of money, it is very difficult to determine what is the fair average value of money. In the city of Cleveland, under the contract between the city and the local street railway com-

pany, based on service at cost, the company was allowed 6 per cent dividends on its stock. This amount was recently increased to 7 per cent, so as to enable the company to sell additional stock at par in order to raise the necessary money for expansion.

At present what are considered to be safe dividend paying stocks are selling at prices to yield close to 8 per cent. Many bonds which formerly sold at prices to yield less than 4 per cent can now be bought at prices to yield 7 per cent. It would appear, therefore, that nothing less than 7 per cent would be a fair rate of interest under present conditions. As most corporations have at least one-half of their investment represented by bonds paying not to exceed an average of 5 per cent interest, the assumption of our lawmakers is that a return of $5\frac{1}{2}$ per cent on the entire capital invested would be equal to 5 per cent on bonds and 6 per cent on the capital stock. In cases where companies have 4 per cent bonds outstanding, a return of $5\frac{1}{2}$ per cent on the entire capitalization would work out 7 per cent on the stock. Under prevailing conditions $5\frac{1}{2}$ per cent would not appear adequate because a 7 per cent return on good stocks would hardly enable railroad companies to sell large amounts of the same at par. The companies, under the law, are not permitted to sell their stock below par. To raise the required capital for expansion they must sell stock at par or further increase their indebtedness which, in most cases, is already unduly large.

THE PROBLEM OF VALUATION

There is still another important problem left open. On what sum shall this

fair return be payable? Congress, the Interstate Commerce Commission and many state commissions have denied that the value of the stocks and bonds of the various railroad companies represent a fair value of the property, and it has been asserted that a fair value is only one-half of the capitalization or even less. It is this question of value which prompted Congress to pass the valuation act some years ago, under which the physical value of all railroad properties was to be determined. It appears to be the intention of Congress that the fair return shall be based on physical valuation. While this valuation will not be completed for another two or three years, it has made sufficient progress to indicate that, on the whole, even at prices prevailing before the war, the railroads were rather undercapitalized. The valuation of a few of the minor roads has been completed and while the results are seriously questioned by the corporations, the valuation in each case has worked out considerably more than the present market price of the securities. In the end it will certainly be determined that not less than 95 per cent of all railroad bonds issued in the United States are issued within physical valuation, and that, therefore, the properties on which they are a lien are entitled to earn a fair rate of interest. In a few isolated minor cases the lines may be so located that the companies would not be able to do so, in spite of the opportunity which will be granted to them under the law, but, at any rate, railroad bonds are certain to become what might be called "validated" and will get a clean bill of health.

As far as railroad stocks are concerned, it will certainly be found that

the stocks of many corporations represent very much more than par value, for instance, those of the Pennsylvania Railroad, New York Central, Chicago, Burlington & Quincy, Louisville & Nashville, Union Pacific, Chicago & North Western, etc. On the other hand, the valuation of other roads will produce a result showing considerably less than the par value of the stocks, but the average of all railroad stocks will probably be not far from par.

CONDITION OF OUR TRANSPORTATION SYSTEM

In the summer of 1914 when the world's war started we were in a period of depression which, in the opinion of many, was due mostly to the fact that the largest consumers of materials, the railroads, were spending as little money as possible, owing to the poor condition of their credit. Subsequently, while business improved, railroad credit did not improve, and up to the time the federal government took over the railroads, less than the usual amount for additional equipment and improvements had been spent by the railroad companies. Since then, that is, during the year 1918, the government, owing to war conditions, has made only such improvements as were necessary for war purposes, and has bought about the average amount of cars and locomotives necessary for that year. In 1919, Congress appropriated only a comparatively limited amount of money for additional facilities. Thus far in 1920, nothing has been done. As a consequence, with the largest volume of business on record, railroad facilities are utterly inadequate; in fact, these facilities are likely to be inadequate for several years, until the

average annual expenditure of approximately one billion dollars for expansion has been made good. During the last five and one-half years less than one-half of the requisite amount has been so expended. The railroads will start in to make these necessary improvements during the latter half of 1920, if they can get money on fair terms. If they cannot get it, we will have a serious reaction in business, our commerce will be hampered and the general growth of business blocked. Therefore, constructive railroad legislation is the most important question before the country. Proper railroad legislation should and must establish a broad credit for the railroad companies in order to enable them to get at reasonable rates, commensurate with the money market, the additional capital required. Such legislation must strengthen outstanding bond issues, because otherwise the companies cannot sell more bonds or stock.

PRICES OF SECURITIES FOLLOW EARNINGS

During the last six months prices of securities have been adjusted somewhat to the result of operations of the

various railroad companies under government management. Railroads which formerly showed a large surplus above interest charges have failed, in many cases, under government management, to earn even all of their operation expenses. Discriminating buyers have refused to buy securities of roads which have failed to earn interest charges, and stocks and bonds of these companies have consequently declined. The management of nearly every railroad expects to re-establish its former business and to handle substantially the same proportion of business as formerly. If this should be the case then the prices of bonds, which have declined as a consequence of the poor showing under government management, are bound to show a considerable recovery, especially in connection with the valuation above referred to. Seasoned railroad securities, which in many cases can be bought at prices to yield up to 9 per cent, certainly must show a large recovery, even under present money market conditions, just as soon as proper legislation is enacted by Congress, and when the coming increase in freight rates becomes effective.

Public Service Bonds

By H. M. ADDINSELL

Of Harris, Forbes & Company, member of Public Utilities Securities Committee of the Investment Bankers Association, New York

IT is a fundamental requirement of a conservative investment that it be founded on a sound and stable business situation. Next to the obligations of municipalities which in effect are a lien on the taxing power of the community, no more sound and stable business situation exists than that of furnishing to the public such necessities of modern life as gas, electricity, street railway service and telephone communication. Water companies are omitted, as private water companies are comparatively few, since this service has been very generally assumed by the municipalities themselves. Notwithstanding the comparatively short history of public service companies, so steady and so ever increasing has been the demand for their products that, from a negligible amount half a century ago the capitalization of public service companies in the United States is now stated to be about fifteen billions of dollars—a figure almost as large as the capitalization of the railroads or of the industrial corporations in the United States.

PUBLIC SERVICE COMPANIES

Gas Companies.—The gas industry is the oldest of the public utility industries in this country, a company having been chartered in Baltimore as early as 1816. Under conditions existing in the large cities gas has become a practical necessity and what the companies have lost in illuminating busi-

ness has been more than compensated for by the increase in the use of gas for fuel purposes. The greater economy in the transformation of fuel into gas and gas into heat places the gas business beyond the reach of general competition in this field from the electric companies, and the greater convenience for heating and cooking purposes places gas beyond the reach of general competition from coal, oil and other kinds of fuel.

Electric Power Companies.—The electric light and power industry hardly needs comment, so many and so diverse are the uses to which electrical energy is being put in our modern life. A phase of this great industry which perhaps deserves special mention at this time is the generation of electrical energy from water power. Hydroelectric properties, when well conceived and executed and operating near a good field for the sale of their product, occupy an almost unassailable position in the economic structure of our country. The creation of their product does not entail the consumption of any of the natural resources of the country. On the contrary, it merely entails the development of a natural resource which is otherwise going to waste. While perhaps a collateral issue from the standpoint of public service bonds, it is particularly unfortunate but perhaps understandable, in view of the crisis in world affairs through which we have just passed, that Congress has not enacted legisla-

tion that will make possible the development of undeveloped water powers on the public lands or on navigable streams.

I understand that at the present time there are some 47,000,000 H. P. that are available and less than 4 per cent of this amount has been developed. The nature of the United States government grants which are now obtainable is such that no prudent banker would place his funds or those of his clients in enterprises involving the development of this power on the public lands or navigable streams, but with the strain of the war over it is hoped that our national legislators will speedily enact legislation that will permit the further development, under reasonable restrictions, of this tremendously important natural resource. Of course, even with the most favorable legislation all the large amount of power mentioned above would not be developed, as proximity to power markets and the expense of development are governing factors. If the powers on public lands, however, were developed to the extent of those on private lands it would release nearly 12,000,000 additional H. P. or over twice as much as is now developed from hydro-electric sources in the entire country. The general economic importance of releasing this power is perhaps not generally appreciated or its effect upon the food, fuel and industrial situation, involving as it does irrigation, electro-chemical and electro-metallurgical processes, railroad electrification, pulp and paper manufacture, and general power supply.

Telephone Companies.—The old idea that telephone bonds were secured merely by a mass of wire has passed

away. The wires, of course, are just as important to the telephone company as are the rails to the railroad or the mains to the gas company, but they are merely the arteries for the transportation of oral communication—the commodity that the telephone company sells—and without system and expert management they would merely represent so much metal. Whether the country is in the heights of prosperity or in the throes of financial depression the telephone must be employed. Modern business and social intercourse have reached the point where we cannot get along without the telephone. The continuance of the country's growth means a corresponding increase in the growth of telephone business. The nature of the telephone business is essentially a monopoly, for the more complete is the inter-communication furnished the more valuable is the service.

Street Railway Companies.—The economic necessity of local general transportation facilities for the larger centers of population cannot be seriously questioned, and it therefore follows that the street railway, in general, is a permanent institution. The increased costs of operation resulting from the war, combined with a general fixed 5-cent rate of fare, have imposed severe hardships on the street railway industry and confronted it with problems for which a permanent solution that is fair to both the public and the street railway owners, in most cases, has not yet been found. This is dealt with in more detail below but as a resumé it is safe to say that, generally speaking, street railways are an indispensable public service and we may count on the American spirit of fair

dealing and coöperation on the part of both the public authorities and the railway owners in arriving at an agreement that will place this industry on the sound financial basis that it must enjoy to enable it to continue to perform satisfactorily its public function.

DEVELOPMENT OF PUBLIC UTILITY COMPANIES

The development of the public utility industry to its present established position has been attended by many difficulties, not all of which are common to every company, but at least some of which have been passed through by the average company. These include periods of financial and franchise abuses; cut-throat, competitive periods; the legal tangles of consolidation and merger; the operating problems involved by the continuous improvement in the art; the change from a public-be-damned to a public-be-pleased policy; problems of finance and of educating the bankers and the public regarding their securities; oppression at the hands of new and inexperienced public regulating authorities; and, last of all, the burdens placed upon them by present abnormal operating costs. Having, so to speak, passed through the fire, the public utility business is emerging as a seasoned, time proven and permanently established industry.

CHARACTERISTICS OF PUBLIC UTILITY COMPANIES

Regulated Monopoly.—It is gradually coming to be recognized that companies providing public service are, in effect, public servants and as greater protection has been thrown around

their operations by public regulating authorities greater limitations have been placed on their speculative earning power. In other words, these companies as a class have been approaching the status of regulated monopolies, which is the logical and the ideal position for them to occupy, both from the standpoint of the service rendered to the public and its inseparable corollary, namely, their ability to raise money to finance the inevitable and steady growth of their business.

Stability of Earning Power.—The importance of stable earning power cannot be over-emphasized in connection with the purchase of bonds. The buyer of strictly investment bonds is entitled to a security which is practically free from the elements of uncertainty, as he is loaning his money at a fixed, limited rate of interest and for a specified time and without the speculative possibility of an increase in either income or principal. In other words, he is purely a creditor of the company and not in any sense an owner who may reasonably expect to see an increase of either his principal or income. As above indicated, from the very nature of the service they perform, these industries may be termed "Public Necessity Companies" inasmuch as an adequate supply of light, heat, power, transportation and communication is essential to the health, progress and prosperity of the modern community. For this reason no property offers a better fundamental basis of security than a well managed, thoroughly equipped and conservatively capitalized public utility company controlling the business of a large city or a populous territory. Their earnings, generally speaking, are not subject to the

wider fluctuations of industrial corporations or even of the steam railroads. The nature of their business is such as to make their gross earnings largely independent of general business and industrial conditions. Even through the war the gross earnings of public service corporations continued to increase although, of course, higher costs temporarily made material, and, it is to be hoped, only temporary, inroads on their net earnings. The steady growth in population of this country justifies the belief that the business of public utility companies will continue to increase from year to year.

Natural Monopoly.—In addition to the stability of their earning power public service companies differ from other corporations in that they are a natural monopoly and that the service they render is a permanent necessity to the communities served. It has become generally recognized that the nature of their business is such that it is undesirable to have competition and that where competition does exist there is a duplication of plant, etc., which, in the long run, places an unnecessary burden upon the people. The companies operate, as a general rule, under franchises or grants from the communities served, which permit them to use the streets, etc., for the conduct of their business. This fact also places public utility bonds above the class of bonds of industrial corporations which operate under no special franchise and which are at all times open to competition. It is interesting to note that practically every important industry uses electric power and has telephone service, so that, in a measure at least, the earnings of the

electric light and power companies and telephone companies are an operating expense of industrial companies.

STATE REGULATION OF PUBLIC UTILITIES

Every state except Texas, Iowa and Delaware has a commission with jurisdiction extending to one or more forms of public utilities. These public service commissions constitute an additional element of protection for the purchaser of bonds of public service companies that come within their jurisdiction. The jurisdiction of commissions such as those in New York, Wisconsin, etc., extends to the approval of security issues, methods of keeping accounts, a general supervisory control over rates charged and service furnished by the companies. Thus these commissions protect the interests of the public served, the companies and the investors in the companies' securities. These commissions generally adopt the policy of discouraging competition where the company already occupying the field is giving good service at reasonable rates. Inasmuch as the commissions control both of the latter, public utility companies, at least in the states where the commissions exist and have the regulatory powers indicated, are becoming more and more strongly entrenched as regulated monopolies.

STREET RAILWAYS

The public service companies are just successfully emerging from a very trying period, to which I have already referred. The abnormal conditions resulting from the war have caused the industry in general, and the street rail-

way industry in particular, to be ground between the upper millstone of rising costs of everything that goes into operation and the nether millstone of fixed prices for the service they render.

Rate Regulation

Rate regulating authorities have been slow to respond to the abnormal cost situation by granting the companies the necessary relief in permitting them to charge increased rates for their product to compensate for the unavoidable increased costs of operation. The owners of this class of property, finding the income over and above operating expenses curtailed and in many cases even approaching the vanishing point, have found themselves in the position where they not only had an unprofitable investment, but where they were not able to give the public the service they should have because the raising of money to finance the constant growth of the business, if not impossible, often could only be accomplished at a cost out of all proportion to the probable return that could be earned on the money.

In this connection, all public utility companies may be roughly divided into two general classes: (1) The class which had its rates specified or which had its rate regulating powers vested in the municipality by franchise contracts with a municipality and (2) the class which had its rates regulated by a public service commission. The former class is the one that has had the most difficulty in convincing the municipality, or the municipally appointed commission, of the absolute necessity of commensurate increases in income to offset the abnormal increases in operating expenses—increases that must be

sufficient to produce enough net revenue to pay a reasonable return on the capital invested in the business, thus to make possible the acquiring of new capital as needed to finance extensions and thus insure to the public the service which it demands and to which it is entitled. The street railway industry is the most conspicuous example, owing to the fact that street railway franchises obtained from municipalities have, as a rule, provided a maximum fare, usually 5 cents. In any event, for a long period of years the nickel has become fixed in the public mind as the proper price for a street railway ride, no matter what its length, and it has been extremely difficult to educate the public as to the merits of, and the legitimate reason for an increase in street railway fares. This question has almost always become mixed up in politics and, without regard to the justice of the case, politicians have been slow to agree to raising the cost of street railway service to the riding- and voting-public.

Increased Cost of Operation

Added to this low rate of return is the fact that street railways have been more affected by the abnormal costs of producing their service than any other branch of public utility industry, due, primarily, to the fact that a larger proportion of their operating expenses consists of payments to labor. So reluctant have the municipal authorities been to grant the necessary increases in fares that, as a result, it is authoritatively stated, over 16 per cent of the street railway mileage in the United States is either in the hands of receivers or has been abandoned as junk. The deplorable state of this

industry has assumed nation-wide importance to such an extent that the President of the United States has appointed a Federal Electric Railway Commission to investigate the street railway situation and to make recommendations for the guidance of those who are in a position, and whose duty it is, to correct the flagrant injustice that is being done.

Street Railway Securities

So heavy has been the cloud that has hung over street railway securities as a class that it has been practically impossible for even the more fortunate companies that have received reasonable treatment in this matter to obtain additional funds at any reasonable rate. However, street railway lines serving nearly 500 cities and towns (nearly every state being represented) with an aggregate population of over 32,000,000 have obtained increases in fares in amounts ranging from additional charges for transfers to 10 cent fare and zone fare systems. Thus it will be seen that the economic necessity of increases in street railway fares to meet increased cost of operation has been generally recognized and it is reasonable to assume that it is merely a matter of time before it will be universally recognized.

Rate Regulation and Valuation

Owing to the public nature of their business and the fact that they are natural monopolies, the public mind is arriving at the point of view that the solution of the difficulties of the street railways lies along the lines of valuing the properties of the companies and then permitting them to charge such variable rates of fare as will enable

them to earn a reasonable return, under changing conditions, on the capital invested in the business. The opponents of this general plan contend that it vitiates the interest of the management in keeping operating expenses down since the owners of the property are assured of a rate of fare that will yield them a return on their investment irrespective of operating expenses. Of course, the answer to this is that in the cases where this general plan has been adopted complete provision is also made for supervision of the operation of the whole arrangement by a regularly constituted city authority, part of whose duty would be to prevent such abuses.

Sliding Scale of Fares

This principle has been successfully adopted in the city of Cleveland where the street railway franchise provides for a sliding scale of fares and machinery for automatically changing them so as to permit the company to earn its operating expenses, fixed charges and 6 per cent on its stock. This example is frequently pointed to by regulating bodies as a conclusive argument that a 6 per cent rate of return is a reasonable one and attractive to capital, inasmuch as the stock of the company enjoys an active market in ordinary times at around par. This, however, is not a sound premise as stocks of Ohio corporations enjoy exemption (having an average value of about $1\frac{1}{2}$ per cent) from local taxation and, in addition, this particular stock has been made available for the investment of trust funds in that state.

The recent experience of the city of Toledo, where the people voted to oust the railway property from the city and

the railway promptly complied by removing its cars to another state, is an interesting indication of the essential nature of street railway transportation to a large modern city. So great was the inconvenience, discomfort and loss of business arising from the absence of street railway transportation facilities—motor transportation proved wholly inadequate—that it was only a few weeks before the city was glad to make it legally possible for the company to come back on the same basis of fares that had originally aroused the city's ire and caused the passage of the Ouster Ordinance and, in addition, with practical assurance from the city that it would work out the situation satisfactorily.

OTHER PUBLIC UTILITIES

The difficulties of the street railways have been shared by the other utilities only to a limited extent. Labor costs of the latter are not proportionately so great and there is no absolute price for their commodity fixed in the minds of the public as in the case of the fetish of the 5-cent street railway fare. Furthermore, rate regulation in the case of gas, electric and telephone companies is more generally in the hands of state commissions than is the case with the street railways. These commissions have responded more quickly to the necessities of the utilities than have the municipalities. The distinction in this respect between public utilities in general and the street railways is obvious to all those familiar with the respective industries and the investment market has generally recognized it, as is evidenced by the more satisfactory market that prevails for other public utility bonds than the market, if

any, for even the best grade of street railway bonds.

BOND ISSUES ON PUBLIC UTILITIES

Protection to Bondholders

It is apparent that even the strong business situation furnished by prosperous public utility companies would avail the bondholder little if his lien on the property and right to enforce the payment of his principal and interest were not properly safeguarded by a properly and conservatively drawn mortgage. The mortgage is the instrument that connects the bondholder to the property and its terms must be such as to protect him and his rights in every reasonably conceivable respect. Elaborate care should be exercised in the preparation of the mortgage to the end that it will completely fulfill its functions and that it will contain no loophole that might vitiate the strength of the document and the protection that it should afford the bondholders.

Amount of Bond Issue

One of the primary considerations that the investment banker has in mind in determining the amount of a bond issue on a public utility property is the duplication value of the physical property to be mortgaged after making the proper allowances for obsolescence, depreciation, etc. In view of the attitude of regulating authorities to the effect that the proper basis for determining the earning capacity of public utility properties is the value of their property, this becomes a consideration that no conservative banker can afford to ignore, but the investment banker has a further concern than the

immediate relation of the amount of bonds to the value of the property.

Sinking Fund

While, of course, there is no such thing as guaranteeing management, the investment banker can at least require that the mortgage contain covenants looking toward the maintenance of the property in a state of operating efficiency and adequate provision for depreciation, and it is also generally customary to include in the mortgage a sinking or improvement fund. No far-sighted public utility operator would agree to a bond issue that did not carry with it the possibility of issuing additional bonds under the same mortgage with reasonable restrictions, and so provide himself with a means of financing a substantial part of his future requirements. The preservation of the proper relation between property and bonds, and earnings and bond interest is provided for by the requirement that additional bonds may be issued only for a percentage, say 80 per cent, of the cash cost of permanent extensions and additions to the property when the net earnings are equal to at least twice the interest on all the bonds outstanding, together with those proposed to be issued. Of course, these requirements are subject to variation to meet the needs of specific cases, but the principle remains the same.

While the banker has insisted that the mortgage provide for a sinking fund to retire a certain amount of bonds each year and thus improve the relation between bonds and property value, the owner has found himself in the position of putting cash into a sinking fund which then goes into the market and buys bonds for cash, usually at a price

somewhat above the general market therefor. At the same time growing companies have frequently required money to finance the legitimate expansion of their business, which has meant that they have had to sell bonds to their bankers at a price sufficiently below the general market to pay the bankers for their services. Thus the company has lost the difference between the price paid for bonds purchased by the sinking fund and that received by the company for bonds sold against additions to property. This loss has been obviated by the adoption of the sinking or improvement fund, which provides that the company may either use the funds arising therein for the purchase of bonds or may expend such funds on property which might otherwise have been made the basis for the issue of bonds. This compromise at least partially accomplishes the primary result desired by the bankers; namely, the improvement of the relation of the property to the bonds, although it is not so desirable from the standpoint of the purchaser of the bonds inasmuch as it deprives him of the periodic special market created for the bonds by the sinking fund.

General Escrow Requirements

In connection with the general question of the size of authorized issues, so rapid has been the growth of the successful public utility companies that authorized issues provided by mortgages of even a few years ago which seemed entirely adequate to care for the bond requirements of the company for the period of the mortgage, say twenty-five or thirty years, have been found to be entirely in-

adequate, necessitating either the creation of new junior mortgages entailing a higher cost of money for the company or the refunding of the old obligations and the issue of a new, larger authorized issue to take their place, at best an expensive operation from the standpoint of the company. Thus we now have many of the larger companies issuing mortgages with an authorized issue of fifty, seventy-five or one-hundred million, or sometimes even without a definite limit to the amount of bonds that may be certified thereunder, subject, of course, to limitations along the lines indicated and the limitation of the life of the mortgage.

Ratio between Bonds and Stock

In connection with the general es-crow requirements which do not permit the issuance of bonds beyond a reasonable percentage of, say 75 per cent or 80 per cent of the cost of extensions and additions, it should be borne in mind that adequate and workable means should be provided for the company to accomplish its junior financing. A well balanced capitalization should show a conservative ratio—say 3 to 2—between bonds and stock. This is sound business from the standpoint of the issuing corporation as it facilitates future financing. That no company should attempt to finance itself entirely on borrowed money secured by a mortgage is so obvious that it hardly needs comment but, nevertheless, many corporations have endeavored to do this and have found bankers who were willing to purchase their bonds. A large part of the past financial difficulties of the steam railroads as well as some of the public

utilities has been caused by disregarding this simple principle.

Notwithstanding the fact that public utility operation and finance have gradually been standardized, each industry and, in fact, each company presents problems that must be solved satisfactorily before sound securities can be issued thereon. The properties must be subjected to searching examinations from business, technical, accounting and legal standpoints and the mortgage drawn under the supervision of experienced experts and attorneys. The majority of investors must of necessity rely largely upon their bankers in making investments since however familiar an individual may be with investments in general, it is usually not feasible, if not impossible, for him to investigate all the numerous legal and technical questions bearing upon the safety of any particular bond.

CONCLUSIONS

The foregoing leads to the logical conclusion that the classes of public utility business discussed present, from an intrinsic and economic standpoint, a sound and stable basis for the issuance of safe investment bonds, especially when the company falls into the class of the larger and more seasoned properties and when the bond issue has been surrounded with proper safeguards. At the present time even the best of public utility bonds are selling on a very much higher interest basis—and at correspondingly lower price—than their intrinsic security would justify in ordinary times, but this temporary market condition, which is common to practically all investment securities, cannot be con-

sidered in the light of a reflection on the intrinsic security of the issues involved. This is rather a question of general market conditions to which must be added the probability that

the investing public has not as yet fully regained the confidence in public utility bonds that the strength of their intrinsic position justifies.

Industrial Bonds

BY JOHN MOODY

President, Moody's Investors' Service

INDUSTRIAL BONDS BEFORE 1900

THE industrial corporation bond is a purely modern product. Thirty years ago, although there were then in existence a large number of substantial industrial corporations of large capital and with numerous stockholders, industrial bond issues were practically unknown. Twenty years ago, even though by that time the period of the formation of gigantic industrial trusts had fully arrived, the industrial bond issue was a novelty and but few corporations had resorted to this type of financing. Not until within the last decade have industrial bonds taken their place as an important representative type of investment security.

It is true that long before 1900 a large number of short term obligations and note issues had been floated by certain types of industrial companies; but such flotations were almost invariably made in response to urgent needs for temporary financing rather than for the purpose of securing permanent capital. If any one will glance over the voluminous statistical records of industrial bond issues which are listed on the various American exchanges today, or examine the records of unlisted issues, he will be immediately impressed with the small percentage of issues which date back to any year prior to 1900. After 1900, however, the output of this form of security tended to increase rather steadily, and since 1910 this method of

raising permanent capital has become commonplace.

There is a reason for everything, and the reasons why industrial bonds did not appear in quantity prior to 1900, and began to appear with increasing frequency after that year, are easily stated. During the earlier period, the industrial enterprises of the country had not, as a general rule, assumed the large corporate form. We had our old style "trusts," such as the Standard Oil Trust, the Sugar Trust and the Whiskey Trust, but these were not corporations in the modern sense, but simply alliances of one form or another, invented for the purpose of regulating prices, restraining trade or throttling competition. They were not formed for the purpose of raising large amounts of capital or for consolidating single industries under one corporate head. With a few important exceptions, the industrial corporations of that decade were relatively small, and their securities were not known or held by any wide circle of investors. Even those of comparative importance were "close" corporations, like the Carnegie Steel Company, or else could boast of not more than a few hundred stockholders at the most. Not until 1897 or 1898 did any number of industrial securities appear on the New York Stock Exchange or the New York outside markets, aside from the original type of industrial "trust." However, there were not many of the latter.

Thus the industrial corporation as

we know it today was practically non-existent at that time. Its securities were, in most cases, looked upon as speculations rather than investments and where capital was needed the speculator rather than the investor had to be appealed to. Consequently, any corporation of an industrial character which attempted to borrow capital by means of bond issues was apt to be looked upon with suspicion. The investor would not buy industrial bonds because of their apparent speculative character, while the speculator did not like them because of the limitation of speculative possibilities.

When the great industrial consolidation movement set in at the close of the century, and hundreds of plants of small concerns in numerous lines of industry were being merged into great corporate units, it became necessary to appeal largely to the speculator for the financing of these consolidations. A period of broad speculative activity was under way all over the country. We had come through the depression of 1893-96; we had completed the reorganization of all the broken down railroad systems; the free-silver craze had spent itself, and the country was securely lodged on the gold basis. Industry was reviving and wages rising all over the country. A stock market boom had set in in Wall Street in 1898, after the Spanish War, and was not again seriously interrupted until the end of 1902.

This period was ideal for the flotation of speculative enterprises and, while money was cheap, and pure investment conditions were favorable, the average investor was being fully supplied with a wide range of selections in the railroad bond market and was not an apt

pupil for the industrial financier. Those were the days when St. Paul general 4s at 110 looked cheap and when men bid large premiums for $3\frac{1}{2}$ per cent long term railroad bonds. Illinois Central 3s then sold around par and the prediction was freely made that within another decade all the great American railroads of high credit would be doing their financing on a $2\frac{1}{2}$ to 3 per cent basis.

Thus industrial companies of even the highest credit had little chance of securing pure investment capital at such a time; but there were vast possibilities in appealing to the speculator and the speculative investor. Consequently, nearly all of the great industrial consolidations were financed through the issuing of large amounts of preferred and common stock. The preferred stock offered generally had a 7 per cent dividend and asset preference, and was offered at par with a substantial bonus in common stock. The preferred issue was supposed to represent the asset value of the plants merged, including necessary new working capital, while the common stock generally represented a capitalization of the expected increases in earning power under concentrated control. All of the important consolidations were financed in this way. Few, if any, bond issues were created. In some cases, however, old bond issues were assumed, but these were few and far between.

INDUSTRIAL SECURITIES AFTER 1902

After 1902 or 1903 this condition in the industrial security field began to change. Many of the consolidations of the earlier period had not been successes; the expected increases in

profits had not been realized, and all too soon a very large number of companies found themselves without sufficient working capital. The consolidations had all been formed in a boom period and for the most part on a wasteful and extravagant basis. Many an enterprise with great intrinsic strength, so far as its type of business was concerned, faced disaster simply because of an urgent need for funds. It was usually impossible to raise further funds through the issue of stock, either common or preferred. In most cases the market prices of the stocks had severely declined, and, as the speculative mania had collapsed in Wall Street, the big industrial companies found it absolutely necessary to make a direct appeal to the genuine investor. The only way to secure funds from the investor in any substantial amount was to offer him some type of security of undoubted strength and value. An industrial bond, secured on the assets of the company, with full priority over the claims of the stockholders, both common and preferred, was the only kind of investment that the conservative man would consider at that time.

Consequently, industrial bond issues began to appear in increasing numbers. The United States Steel Corporation put through its bond conversion scheme, whereby a large amount of its preferred stock was retired and its second mortgage bonds issued; other steel and iron companies, manufacturing concerns of various types and many of the representative consolidations of a few years before soon had bond issues outstanding. Many a large industrial corporation was in those days saved from receivership or

disintegration through the timely flotation of a bond issue and in after years developed into a position of permanent security and strength.

Thus the industrial bond, like most other particular types of investment securities, was mainly the outgrowth of an emergency. Had the original plan for financing and building up industrial combinations been an unqualified success, the industrial bond, as we know it today, might not have come widely into vogue for many years, if at all. But after 1905, and up to recent times, the industrial bond was steadily breaking down prejudice and enlarging its investment market in this country. Fifteen years ago the typical investor almost invariably ruled out an industrial bond investment, simply because it was an "industrial" and, therefore, must be speculative. Ten years ago, as a result of so many of this type of bond having become seasoned and having proven themselves good, the prejudice had been largely broken down; while during the past five years, the average intelligent investor no longer discriminated against industrials, but in his selection was willing to put them all to the regular investment tests which he would accord other types of securities.

INDUSTRIAL BONDS TODAY

Through this evolution in financial affairs and the accompanying seasoning process, the industrial bond investment has now come into its own. Today the investor has a wide range of choice in the industrial bond field and can select issues of fully as high quality as in the steam railroad or other fields. He can also secure fully as large an income return as in other

directions and in many instances can find really greater bargains.

Industrial bonds of all qualities and grades and of varying characteristics can be found. In these respects they do not differ from other types of bonds; there are issues which appeal to speculator as well as investor; the man who wants an income but also "a chance at a possible profit" can find it in the industrial bond market today as easily as he can find it in the public utility or steam railroad bond market. Industrial bonds are not so plentiful as railroad bonds, but bargains are sometimes far more plentiful. This has proven to be the case to a very large-degree during the past half dozen years. While the highest grade long term industrial bonds have receded in price since 1914 in the same way that the highest grade railroad bonds have, yet junior grade industrial bonds have held far better, on the average, than have junior grade railroad bonds during the past few years.

Railroad Bonds

There have been special reasons, of course, for the great decline which has taken place in railroad bonds since the opening of the World War. The enormous amount of foreign liquidation in the old seasoned issues, which were held so largely abroad, the abnormal war-time conditions which tended to injure the position of the railroads as a whole, and the uncertainty regarding the future of the railroads after their return to private operation, have naturally caused depression of a most extreme character in this type of security. Added to this has been the prevailing tendency, long continued, toward high money

rates, the competition of mammoth war loans and the depressing effects of high war taxes. These latter factors have depressed industrial bonds also, but, generally, not to the same extent. Industrial bonds have not gone down alarmingly, on the average, for two reasons: First, they were not, as a rule, selling at such high average prices at the opening of the war as were similarly strong or secure railroad bonds; second, industrial companies have been benefited, in a large number of cases, by the same abnormal war-time conditions that have so seriously injured the railroads.

Simplicity of Industrial Bonds

While several different types of industrial bonds are familiar to every market, there is not the wide diversity of type that will be found in the railroad field. In the railroad field one will find mortgage bonds, running from first mortgage to eighth or tenth mortgage; consolidated, collateral, refunding, general, general consolidated, general lien, prior lien, debenture, income and many other types of bonds. Some of these issues will be directly secured; some indirectly. A first mortgage railroad bond may be secured on a worthless branch and be less secure than a tenth mortgage on the same company's main line; a consolidated general lien on a railroad may be better than all of the so-called underlying liens on the same property. But not so, as a rule, with the industrial bond. It is generally greatly superior to the railroad bond in simplicity. Usually it is the single bond obligation of the company, and very seldom do we find an industrial company with more than three or four bond issues out-

standing; while a vast number of industrial companies have no bonded debts whatever. A notable exception is the United States Steel Corporation, but even this company has outstanding only two bond issues of its own, all of the others having been assumed either at the time of the merger twenty years ago or since.

I have already pointed out the reasons for the scarcity of industrial bond issues as compared with railroads. The industrial corporation was originally formed and financed through stock issues alone, while the great railroad companies are all earlier consolidations of companies which for generations had been financed almost exclusively through the issue of bonds. Thus a typical railroad like the Erie has outstanding and is responsible for fifty or sixty different bond issues, whereas a typical industrial company like the American Smelting & Refining Company has but one.

In earlier days industrial companies frequently issued debenture bonds rather than mortgages. This was a natural outgrowth from the custom of issuing notes or financing with temporary loans and commercial paper. In many cases the earlier industrial companies found it impossible to place actual mortgages on their properties. Their charters, framed at the time they were first formed through the flotation of stocks often forbid the placing of any mortgages on the properties without the consent of a large majority of the stockholders. But gradually it was realized that a mortgage bond giving the company necessary funds and good credit would in the long run benefit the stockholder, while it could hardly be more harmful

for him than a debenture bond or note which would in any event have a legal claim ahead of the stockholder on both the assets and income. In fact, from any point of view, a long-term bond obligation furnishing permanent capital, is bound to be better for the stockholder than temporary obligations or floating debt.

SECURITY OF INDUSTRIAL BONDS

With a full recognition of these facts, industrial mortgage bonds have come more and more into vogue in recent years, and most new industrial bond issues nowadays are secured in one form or another. They have also gradually taken on the characteristics of other types of railroad bonds. In recent years, convertible industrial bonds frequently have come into the markets, as have collateral bonds, secured by pledge of other securities, assumed or guaranteed industrial bonds, etc. These different types of issues have been created, of course, in response to investment market conditions. The industrial convertible bond, like the old railroad convertible issue, is chosen to appeal to the man who wishes to both invest and speculate, but wants to be sure that his speculation is all in one direction. In other words, he wants to make his principal and income secure, but also wants to share in any possible appreciation that may occur in the price of the stock into which the bond is convertible. This type of bond is often issued by companies whose credit is not of the highest, or was not at the time the bond was issued.

Convertible Bonds

There have occurred many instances of large profits resulting from invest-

ment in industrial convertible bonds, a notable case being that of the Pierce Oil Corporation 6s, recently called. These bonds were selling below 75 in 1916, but early in 1919, as a result of a rise in the stock, they sold well above 130. The Otis Elevator 5s which used to sell around 80 have recently risen to 140. The Chile Copper Company has also done financing with convertible bonds, as have Wilson & Co., Armour & Co. and the Bethlehem Steel Corporation. In some cases the convertible bonds are convertible into other issues; in some cases into preferred as well as common stock, etc.

But while convertible bonds are often attractive enough as real investments, they are generally in a more speculative position than the representative industrial bond investment. The convertible feature is what usually makes them attractive, and not their intrinsic quality.

In judging industrial bonds, the investor naturally should exercise extreme caution. Ordinarily, it is more difficult to ascertain the real investment value of an industrial bond than of a railroad bond. Railroad reports are necessarily more elaborate and detailed than industrial reports. Uniformity is required by law and there is little excuse for an investor to go wrong on railroad *information*, although of course he may easily go wrong on deductions or opinion. But in the case of the industrial company an investor is often asked to take a great deal on faith. Many companies

furnish full information and the reports of some are notably elaborate and complete, but there are far too many who fail to furnish the essential facts. In such cases the investor must do the best he can with what is available and if he is not satisfied he should reject the investment.

It is difficult to compare the relative value of industrial bonds, for the reason that as a class they represent many businesses of distinct or diversified character. One can, of course, readily arrive at the asset value back of a bond of the United States Steel Corporation, the great assets of which are exhibited to any and everybody, but a bond secured on a business the main asset of which is a trademark, may or may not be good. Earning power of such a business is important of course; but earning power alone considered may easily lead an investor to disaster. The earning power of the great H. B. Claffin Company was always heavy, but the absence of a complete exhibit of liabilities in its annual reports resulted in enormous losses to its stockholders.

The safest plan for every investor, in selecting industrial bonds, is to confine himself to obligations of those companies who follow the custom of taking the public into their confidence and exhibiting all the facts as they actually are. More and more managements are doing this every year and the time should not be far distant when every industrial enterprise which seeks capital in the investment world will adopt this enlightened policy.

Real Estate Bonds as an Investment Security

By GEORGE A. HURD

President, The Mortgage-Bond Company of New York

REAL ESTATE BONDS

REAL estate bonds are obligations secured by mortgages or trust conveyances of real estate. While any mortgage may secure a series of bonds instead of a single bond or note, which might thus be called real estate bonds, they would not differ in any way, except that of convenience, from the ordinary mortgage transaction. What is meant by "real estate bonds" or mortgage bonds in the investment sense is a series of bonds in convenient denominations secured by real estate mortgages, the bonds being issued by a financial company formed for that purpose and itself obligated on them. Such mortgage companies have been developed so long in Europe that any study of the system must include an examination of the history of the development of the mortgage business in Europe, and other parts of the world subject to European influences, as a prerequisite to the understanding of real estate bonds as an investment security in this country.

In considering such bonds, it is essential to examine them from the standpoint of the fundamental requisites of all good investments, namely, safety, interest return and convertibility. Of these requisites, that of the safety of the principal under all conditions which may arise is by far the most important and the one to which most consideration will be given.

WHEREIN RESTS THE SECURITY OF REAL ESTATE BONDS

Stability of Productive Power of Land.

—It may be said at the outset that the principal advantage which real estate has over other forms of security rests in the certainty or stability of its productive power. All value in real estate is the result of income capitalized. In the case of city real estate, the natural causes which lead to the growth of cities in certain locations create a permanent demand in those locations for areas on which to live or transact business. Such advantages in location are paid for in the form of rent, and as long as a community exists there will be income from the use of locations within it, and real estate values founded upon this income. In regard to farm lands, the productivity of the soil creates an annual income, a part of which, as rent, may be capitalized into value. As long as the soil is productive, income, and therefore real estate values, will exist.

Convertibility of Capital.—So large a part of the world's wealth consists of real estate, that the use of it as security for debt has been a matter of the most vital importance in the commercial progress of the race, since it gave to land a partial convertibility and prevented the capital invested in real estate from being wholly fixed. Down to the beginning of the last century, however, mortgages were restricted to

transactions between individuals who had personal knowledge of the particular property offered as security. This necessarily confined possible mortgage lenders to those residing near the property on which a mortgage was desired, and, as capital could not move freely to the places where it was most needed, great differences in interest rates existed between different localities.

FACTORS ENCOURAGING MORTGAGE ASSOCIATIONS

Among other disadvantages attending this condition of things was the fact that the effort to find individual lenders, having the exact amount needed, made it unduly expensive to obtain loans and resulted in economic waste through unnecessarily high commissions. Individuals were also unwilling to make long-time mortgage loans which were nearly or quite inconvertible in their hands, and this resulted in forcing borrowers to pay commissions for obtaining new loans at comparatively frequent intervals, and in exposing them to the risk, at each maturity, of being unable to replace the loan. Individuals, also, did not ordinarily wish to have their capital returned to them a little at a time, but wanted the full sum at the termination of the loan. This prevented the use of amortization loans, or loans that are paid off by degrees throughout the life of the loan. This type of loan, which is almost universal on the continent of Europe and which is coming into more frequent use in this country, so greatly increases the safety of mortgage investments that the resulting reduction in interest rates may be sufficient to enable a borrower to pay off a loan in forty or fifty

years, by an annual payment for principal and interest no greater than the payment for interest alone would be, were the loan without the amortization feature. It may be added that loans for fifty or seventy-five years would be for too long a period to be safe, unless for a constantly decreasing amount.

Perhaps the greatest single objection, however, to the old system of conducting the mortgage business arose from the fact that most individual investors could not be mortgage experts, and as a result frequent and serious losses were made, which tended to increase the whole level of interest rates.

So serious were these objections that in 1770 the first association for conducting the mortgage business was formed with government assistance. Before describing such an association it may be well to say that there exist side by side in Europe these mutual associations which deal largely, if not exclusively, in farm loans, and mortgage-banks, or stock companies, for dealing both in city and farm loans, the latter having appeared almost simultaneously in various countries of Europe about 1835. These two forms of conducting the business operate through the same method, which is to make mortgage loans and then issue their own bonds secured by an equal amount of mortgages.

MUTUAL MORTGAGE ASSOCIATIONS

General Characteristics.—While there are, of course, differences between the laws governing mutual mortgage associations at different times and in different countries, the great majority have certain principles in common. They are formed with their borrow-

ers as members, and each member is responsible for any loss of the association through bad loans; a condition which acts as a check on the committee of members which approves applications for loans. They began, generally, by making loans, not in money, but in bonds of the association, which the borrower then had to sell for the best price he could; though, as a surplus was accumulated, this feature was given up and the loans made in cash, the bonds being sold by the association. Their loans are long-time loans, generally from fifty to seventy-five years, with an annual payment sufficient to retire the principal of the loan, and with privileges of anticipation. The associations are also restricted by law as to the locality in which they may make loans, the character of the property they may loan on and the margin of security they must have.

Central Associations of Northern Europe.—A later development in some of the countries of Northern Europe has been a central association, which makes no loans itself but issues bonds secured by the less well-known bonds of local associations, thus obtaining a lower rate of interest through having better credit. The mortgage companies proper are stock companies, which are conducted along lines similar to the associations and are subject to similar legal restrictions. There is, of course, no individual responsibility to make good the losses resulting from bad loans, the place of this being taken by the capital and surplus of the company, and by the limitation by law of issues of bonds to a certain number of times the capital.

The Credit Foncier of France

The Credit Foncier of France, founded in 1852, is the largest and most widely known of all mortgage companies, and the magnitude of its operations may be judged by the fact that for many years past its outstanding bonds have amounted to between 3,000,000,000 and 4,000,000,000 francs, while its credit is so good that the rate of interest on its bonds had dropped some years ago to 2.60 per cent, though more recent issues, even before the war, were at higher rates. There are in France in addition to the Credit Foncier, which enjoys special privileges from the government, and, consequently, has no rivals, only small local mutual associations for making farm loans in restricted districts. More than two-thirds of the mortgage loans of the Credit Foncier are on city property, and the remaining one-third on farms. Although in the early years of the company's history a great majority of the city loans, in amount, were on property in Paris, the loans in other French cities have for some years past exceeded those in Paris, the company thus showing a growing tendency to distribute its loans more widely.

Mortgage Companies in Italy, Spain and Portugal

In Italy, Spain and Portugal the example of France has been followed, and one large company is authorized to conduct the business of issuing mortgage bonds and is given valuable special privileges. Throughout the rest of Continental Europe the

mortgage business has been developed through the dual system of mutual associations and stock companies. British, French and Dutch companies also exist for loaning in North and South America, Africa and other parts of the world.

Mortgage Business in England

An exception to the general prevalence of this system is England, whose example has largely influenced the United States, though it is doubtful if the causes which led to a different development of the mortgage business there are applicable here. England has no mortgage company loaning on English property and organized on lines similar to those on the continent, though English and Scotch companies operating in the United States, Canada, Australia, Cape Colony, Natal, Mauritius, Argentina and Peru, issue bonds in the same manner as the European companies. One of the principal reasons is, no doubt, the prevalence in England of long-time ground leases which do away with much of the necessity for mortgages, since instead of owning the fee with his own capital and borrowing on mortgage for improvements, the tenant under a long lease puts his own capital into the improvements and pays an annual ground rent in place of interest on a mortgage. Then, too, legal restrictions, such as the life-estates and entails commonly met with in England, are great obstacles to the mortgaging of property. And it must be remembered, also, that since the security in England depended to an unusual degree on questions affecting legal titles, the mortgage business naturally fell largely into the hands of

lawyers, who still control a great part of English mortgage investments.

REASONS FOR STABILITY OF MORTGAGE ASSOCIATIONS IN EUROPE

It is too early yet to measure the effect of the war upon the mortgage companies of Europe, but it is a striking fact that up to the time of the war there had never been a failure of a European mortgage company or association, with insignificant exceptions due to dishonest management. Such long-continued safety and success make it interesting to examine the safeguards established by law with a view to preventing losses on bad loans. The principal of these are four in number, and have to do with the class of real estate accepted, the percentage of value to be loaned, the limitation of the volume of bond issues in proportion to capital, and the requirement of annual payments in reduction of the principal of loans. While some variations are naturally found in different countries, the underlying basis is found on examination to be surprisingly uniform.

Class of Real Estate Accepted

Taking up first the class of real estate accepted, we find that no company is allowed to loan on vacant land or unproductive property. The restriction is sometimes expressed in this way: "The company shall make loans only on property yielding a permanent and sure income." Hence, no loans are permitted on mines and quarries. To these prohibitions the Credit Foncier adds theatres, mills and factories, except where valued at what they would bring if sold for a different purpose.

Many other companies prohibit

loans on factories, and, in addition, loans on "uninsured buildings or country houses without land." The same principle prohibits loans "on country castles or on buildings which cannot be rented separately from the estates to which they belong," while in some instances a company is only permitted to loan "on buildings that have been in use for three years." Undivided interests in property are universally excluded as security.

Limitation of Percentage of Value to be Loaned.

The second safeguard is the limitation of the percentage of value to be loaned. With very few exceptions, no companies or associations are ever allowed to loan more than $66\frac{2}{3}$ per cent of the value of the property, the limitation being sometimes $66\frac{2}{3}$ per cent of the value of land and 50 per cent of the value of buildings. Many companies of Central Europe are limited to 60 per cent of the value, and some to 50 per cent, while loans on vineyards and forests cannot be made for more than $33\frac{1}{3}$ per cent.

Turning to other countries, we find that the Credit Foncier of France is limited to 50 per cent, except on forests and vineyards, where the limit is $33\frac{1}{3}$ per cent. In Italy the limit for mortgage companies, originally placed at 50 per cent, was raised in 1881 to $66\frac{2}{3}$ per cent. In Belgium the associations are limited to 50 per cent, though the mortgage companies loan up to $66\frac{2}{3}$ per cent. In Denmark the companies are limited to 60 per cent on land and 50 per cent on buildings, while the associations are limited to 50 per cent on land and 40 per cent on buildings. In Norway the limit is 60 per cent on all

farm loans and loans in Christiania and Bergen, while it is 40 per cent to 50 per cent in other towns. In Sweden the limit is generally 50 per cent, though the one mortgage company there has been raised to 60 per cent. In Argentina and Mexico the limit is also 50 per cent.

These limitations may be compared with the limitations imposed by law in this country for the mortgage investments of trustees and savings banks, and those generally adopted by custom. In New York State the limit for trustees is $66\frac{2}{3}$ per cent and for savings banks 60 per cent, while, except in a few other large cities, 50 per cent is a maximum, and in smaller cities and newly developed agricultural districts loans are not often made for more than 40 per cent of the value. It should be stated, however, that the delays incident to foreclosure are much greater here than in Europe, with correspondingly greater accumulations of delinquent interest, taxes and costs, so that our loans are, in fact, for larger percentages than they appear to be. In some cases European companies have the right to take immediate possession after default, the Credit Foncier having to wait but eight days, and the Banco Hipotecario of Spain only two days.

Amount of Bonds that May Be Issued

The third limitation established has to do with the amount of bonds which may be issued with a given amount of capital. The surplus is in all cases treated as a separate and special fund, and the usual legal requirements are that a percentage of the earnings amounting to 10 per cent or 20 per cent be set aside annually until the surplus

equals 20 per cent or 25 per cent of the capital of the company. The Credit Foncier of France is limited in its issues to twenty times its capital stock. This was, until about twenty years ago, the generally recognized limit in Central Europe also, but since then the limit has been placed at fifteen times the capital. Among companies restricted to ten times their capital stock are the Italian companies under the law of 1884, the Swedish Company, the Banco Hipotecario of Mexico, and the greater number of Dutch mortgage companies, though the latter are restricted to ten times the *subscribed* capital, only a fraction of which is paid in. Norway limits the issues of its mortgage company to eight times, and Denmark its companies to six times their capital. The English and Scotch companies, which loan only outside of Great Britain, follow a different plan and usually limit their bond issues to an amount equal to their subscribed capital, or even to the unpaid portion of it. At first thought this would appear to be more conservative than the continental method of allowing issues up to fifteen or twenty times the capital, but it may well be doubted whether the continental method is not, in fact, the safer, since with a large volume of business, profits are satisfactory from a small difference in interest rates between the bonds and the mortgages securing them, and the temptation is removed of taking risky loans at higher rates of interest in the attempt to earn greater profits through a wider margin of difference in rates, where the volume of business is small. Incidentally, it may be mentioned that the Credit Foncier, and the Credit Foncier Canadian, are limited by law

to a difference in interest rates on their loans and their bonds of $\frac{6}{10}$ of 1 per cent, the Italian companies, and more recently the Italian National Bank, to $\frac{45}{100}$, and some other European companies to 1 per cent, thus recognizing the danger of attempting to make large profits out of loans at high rates of interest.

Other Safeguards to Securities

The limitation of the territory in which loans may be made, and the general requirement of annual payments in reduction of the principal of loans, together with a rigid government inspection, furnish additional safeguards, as does also the further requirement that any property taken under foreclosure must be promptly sold, thus preventing a company from speculating for a future possible rise in the value of its foreclosed real estate, and concealing its losses by carrying such foreclosed real estate as an asset at cost, regardless of its real depreciation.

ELEMENTS OF RISK TO BE COVERED IN MORTGAGE LOANS

As has been shown, the companies engaged in issuing real estate mortgage securities in Europe are now safeguarded by a body of laws which have gradually grown up on this subject, and by which they are governed in accordance with past experience. In order to insure complete safety to investors, the business of making mortgages and issuing securities against them is one which should everywhere be closely controlled by law, as may be realized from a consideration of the varied elements of risk to be guarded against. While many of these elements, against which the margins on mortgage-loans

are to guard, are the same in farm loans as in city loans, the problems in farm loans are on the whole much simpler, the quality of the soil, the annual rainfall and transportation facilities being the essential elements to be considered.

In the case of mortgage loans on city property, however, the margin to insure safety must be sufficient to cover the following elements of risk:

- (1) Errors of judgment in valuing property.
- (2) The lowering of real estate values by general commercial and financial depressions.
- (3) Loss of value by changes in the internal structure of cities.
- (4) Depreciation of buildings.
- (5) Accumulations of delinquent interests, taxes and costs during foreclosure.
- (6) Loss of value through disposing of property at forced sale.

Errors of Judgment in Valuing Property

We shall consider each of these factors in order.

Since each piece of real estate stands by itself, there can never be a "market value" for it in the sense that there is for bonds or shares of stock, where each sale is representative of the entire issue. The valuation of real estate must rest on opinion only, and while it may be comparatively easy for an expert with full information to value real estate correctly in an active market, in a market where transactions are few the difficulty is very great. In order to have appraisals of any value, a real estate expert must have at his command a large fund of information in regard to sales of property, rentals of property, and the cost of construction

of buildings, since these are indispensable to a proper valuation of the real estate. It is not always easy to obtain information in regard to the consideration for sales, especially in New York City, where the practice is growing of setting out a nominal consideration of one dollar in deeds conveying property. The insertion in deeds of fictitious considerations must also be guarded against, such considerations being sometimes placed at a figure above the selling price, in the hope of giving the property a fictitiously high value, and less frequently at a figure below the actual selling price, in the hope of obtaining a lower assessment for purposes of taxation.

The selling price of property is ordinarily based on the rental of the property, which is the source of its value, but this is modified by the prospect of the future rental of the property. The ordinary method of appraisal of improved property is to add to the estimated land value the present cost of the buildings, with an allowance for age and depreciation. The aggregate of these values should always be checked wherever possible by capitalizing the net rentals of the property, after deducting expenses of all kinds, to find if the building's commercial value is equal to its structural value. Wherever a building is misplaced or badly designed, loss of income over a period of years is a sure result; and examples could be given of many expensive buildings, the cost of which has been entirely thrown away, as is shown by the fact that the net rentals produced by them have been less than those produced by adjacent properties improved with buildings of trifling cost. The structural value of the im-

provements, considered by itself, is therefore an entirely unsafe guide in such cases.

On the other hand, to rely on the amount of the net rentals without considering the proper rate of capitalization would be unsafe, since different classes of property are capitalized on a different interest basis. For example, a retail store property rented on a long lease to an entirely responsible tenant might be capitalized on a basis of 5 per cent net return, while a tenement house with a large number of tenants and corresponding vacancies and difficulties of collection would be capitalized at a considerably higher rate.

Effect of Commercial and Financial Depressions on Real Estate Values

Mortgage loans ordinarily cover so long a term of years that general financial and commercial depressions during the life of the loans cannot be foreseen, and loans should have margin enough to cover shrinkage of value due to this cause. A period of general industrial depression has a powerfully depressing effect on real estate, but this effect varies greatly on different classes of property. When a mortgage loan is made for a term of years, if the borrower pays his interest and complies with the covenants of the mortgage in regard to taxes, insurance, etc., the principal of the loan cannot be called, nor can additional security be called for, no matter what the decline in the value of the property mortgaged may be. A great distinction is thus apparent between mortgage loans and ordinary bank loans; and when a loan is made for the usual term of five years, it should be borne in mind that the property, to furnish adequate security,

should at all times during the five-year period show a comfortable margin above the amount of the loan. We are familiar with the recurrence of panics every twenty years with intermediate depressions of less violence at ten-year periods.

The effect on real estate of these greater and lesser panics is, however, not directly commensurate with the financial and commercial disturbance which they cause. A reason for this is probably to be found in the fact that the growth of population in American cities has been, ever since the foundation of our government, conspicuously greater in the alternate decades coinciding with the lesser or intermediate panics. The effect of this has been to offset the effect of intermediate depressions, as far as city real estate is concerned, because the abnormal growth of city population has coincided with that general period, while the relatively slow growth of cities during the decades coincident with the greater panics aggravates the depression of real estate following these panics.

During the period of depression following a great panic, individuals of every community are forced to restrict their expenditures to the most necessary objects, and the result of this is that the classes of property within a city which maintain their value best are the two indispensable classes of ordinary business and ordinary residence. All properties devoted to special uses, such as theatres, clubs, hotels, churches, etc., as well as factories and warehouses especially suitable to a single line of business, suffer severely. During such a period, also, all properties which, on account of the growth or movement of a city,

have a value based on expectations of higher rentals in the future are greatly depreciated, since the element of value based on future expectations is largely eliminated. This depreciation applies especially to suburban land, or that at the circumference of a city which is just coming into use, and is aggravated if the growth of a section has been artificially stimulated by capitalistic influences. The difficulty of valuing property during a period of depression is greatly increased just at the time when, through falling rentals and values, it is most necessary to be careful in making mortgage loans. This arises partly because the number of real estate transactions is greatly reduced and information from this source is thus largely cut off, since no property owner will sell under such conditions except through necessity; and also because of the difficulty of forecasting future rentals where vacancies exist, it being a hard matter to judge whether these are to be temporary or long-continued. To avoid the difficulty which arises from a lack of information about sales, the most feasible method is to prepare a scale of relative values for a city, so that a few real estate transactions in different localities will tend to show a drift of values, just as an inspection of the daily fluctuations of a half dozen prominent stocks tends to show the drift of fluctuations for the whole list of securities.

A further effect of a depression of values on different kinds of property, not usually given sufficient consideration, is the great difference which a reduction in the gross rentals of property makes in the net rentals, where the expenses of the property are heavy, as contrasted with the slight effect which

such a drop in gross rentals has where the expenses of a property are light. This is readily shown by contrasting a modern office building, which normally has expenses amounting to about 50 per cent of its gross rentals, these expenses including not only taxes and insurance but heat, light, elevator service, janitor service, etc., with a store building of moderate height where the expenses do not amount to over 15 per cent of the gross rentals, the owner having no expenses except taxes and insurance. If we assume a drop in gross rentals amounting to 30 per cent, the drop in net rentals of the office building will be 60 per cent, while the drop in net rentals of the store building amounts to only about 35 per cent. Since values follow rentals, the stability of value of a property that is less expensive to operate tends always to be greater than that of a property which is more expensive to operate. Careful lenders are, therefore, disposed to exercise the utmost caution in loaning on large buildings, such as office buildings, hotels and apartments, the expenses of which are heavy.

Loss of Value through Changes in the Internal Structure of a City

There is always going on in a city a movement of the retail stores in the direction of the best residence district, this being an effort on the part of the storekeepers to approach as closely as possible to their customers. As this district moves forward it leaves a vacuum behind it, which is filled later by wholesale dealers or is used for other purposes which are inferior from a rental standpoint. Unless the growth of a city is so rapid as to make its wholesale property worth as much as retail

property was a few years before, there will be an actual drop in the value of the property so replaced by wholesale. Where there has been a change of axis of the main retail business streets of a city, there has always occurred a shrinkage of the values created by an anticipated growth of the business district in the line of its original direction. Many examples are to be found in American cities of the best retail business streets being parallel to a lake or river front during the growth of a city up to a population of perhaps 50,000, while, after that point in population has been passed, the concentration of the best residence district at a distance from the water front has drawn business out towards this residence district, on lines at right angles to the water front and to the original business streets.

As regards wholesale and warehouse property, the chief danger to be guarded against arises through changes in the location of transportation terminals. The natural tendency of wholesale property is to place itself between its transportation facilities and the best retail business district, so that it may at the same time be able to handle its goods cheaply and yet be in a location convenient for its customers. Where the wholesale business of a city grew up through river transportation, it is noticeable that of late years the predominance of railroads has been so great as to withdraw wholesale business very largely from locations occupied by it for half a century, with an increase of value near the railroad terminals and a corresponding decrease of value near the wharves.

In the case of residence property, purely social reasons are the predomi-

nant ones in establishing high values, and property of this character is for this reason liable to depreciation through changes of fashion. Changes of transportation are also of great importance in determining residence values, improvements in street-car facilities and the general use of automobiles enabling people of a good social class to live at greater distances from the business center of a city and among pleasant surroundings. The effect of this has been to equalize the value of residence property which is close to business property, while rapidly enhancing the value of well-located property further out. Well-developed residence districts at a distance from the business center of a city have an element of stability in the fact that they are less likely than those closer to the business center to be injured by the encroachment of nuisances. In the term "nuisances" may be included buildings for every kind of utility except residence, since homogeneity is necessary to the maintenance of value in a residence district.

Depreciation of Buildings

Mortgage loans are usually made for a long enough term to have the improvements lose appreciably in value from age and usage during the life of a loan, except in cases of the most expensive construction. The loss through depreciation where a building is kept in good repair is estimated at $\frac{1}{2}$ per cent a year for the highest type of fire-proof construction, and increases for different classes of buildings to a maximum of 5 per cent a year for cheaply constructed workingmen's cottages. If improvements are not kept in good repair—and it is practically impossible

for the mortgagee to compel repairs to be made—the further depreciation from this cause must be added.

In addition to the depreciation of buildings through age and usage there frequently occurs a further and more serious depreciation due to changes in style or new methods of construction, or to a change of utility in the location. An example of such a change in style in detached residences has been the abandonment of the mansard roof, once popular throughout the United States, with the result that residences built in this style of architecture depreciated heavily in value, regardless of the soundness of their structural condition. Other changes in fashion affecting residence values are the abandonment of narrow hallways and of stained glass and other exterior ornamentation, together with the addition of newer and better methods of heating and lighting houses.

As regards business property, the erection of modern fireproof buildings frequently takes away a large part of the value of the older buildings with which they compete; and the failure of architects formerly to plan their store buildings with the ground floor frontage all open for the display of goods, has greatly depreciated the value of older buildings, or has led to their reconstruction along modern lines at great expense.

A further element of depreciation comes when there is a change of utility in the location. If a residence property has become suitable only for business, the value of the improvements disappears entirely, and the same is true of any such change of utility, subject of course to the possibility of saving a portion of the value of existing im-

provements through their reconstruction for a new purpose.

Accumulations Pending and During Foreclosure

The amount loaned on property, practically speaking, is not the face of the loan, but the amount of the debt with all its accumulations at the time of realizing on the property which has secured the debt. These accumulations are usually made up of delinquent interest, delinquent taxes (with penalties and a high rate of interest), delinquent street improvement taxes (with penalties), court costs, attorneys' fees, repairs after obtaining the property, and a real estate commission for selling, which varies from a little over 1 per cent in New York up to 5 per cent in smaller communities. In addition to these, there is a total or partial loss of interest from the time of commencing suit until the property is finally sold. In the aggregate these accumulations vary from 10 per cent of the face of a loan to a maximum of 40 per cent in cases of small loans where the laws are unfavorable to lenders.

These variations in the amount of the accumulations attract attention to a comparison of the laws of the various states in regard to mortgage loans. One of the commonest provisions in Western states, and one which adds largely to the accumulation, is the provision of law granting to the mortgagor a period after judgment of foreclosure within which he may redeem the property by paying to the judgment creditor the amount of the judgment with interest. This provision seems to have come into existence in states where mortgage loans on agricultural property predominated, with a

view to avoiding the serious effect on farmers of a single crop failure; and since such laws must be uniform in their operation they apply to loans on city property as well. This period of redemption varies from nine months in Nebraska, and a year in most of the Rocky Mountain and Pacific Coast States, to eighteen months in Kansas and two years in Alabama. The effect of this law is to prevent outside investors from buying at foreclosure sales, since they cannot be sure that the property will not be redeemed by the mortgagor by payment of the judgment and interest; and it also prevents a mortgagee, during the period of redemption, from improving property and obtaining larger rentals, for the same reason. Where, as in a few of the Middle Western States, the mortgagor remains in possession during the period of redemption, the accumulation is much greater, since during this period the mortgagee is entitled to no rental return at all, and a further action at law may become necessary to obtain possession. Other legal features which affect the amount of the accumulations are those which permit interest to be compounded, which permit penalty rates of interest, both on delinquent principal and interest, and large contractual attorneys' fees. Obviously the element of time is the principal one, and, where a mortgage may be foreclosed and the property obtained in a short time, the accumulations will be small. In this respect the laws prevailing in the Southern States appear to be more favorable to lenders than those in any other part of the United States.

Loss of Value through Forced Sale

Though properties seldom have to be bought by the mortgagee at foreclosure

sales in Europe, it is still the common rule in the United States, largely owing to defects in our mortgage laws. As has been pointed out, the time necessary to obtain title or sell the property at foreclosure sale in Europe is, generally, very much less than it is anywhere in the United States, and is generally less in the Eastern and Southern States than in the Western. Is it usually in the largest cities only, however, that there is any speculative market furnishing a demand for properties of all kinds, at all times, at a reduction in price from the normal value. Outside of New York City there is practically no auction market for real estate, and in most, though not all, of the smaller cities, properties are sold generally to those who intend to use them personally. Where, therefore, a quick sale is desired, a surprising difference will be found in different communities and on various classes of property; some cities having an active market which will absorb any good property offered at a price within perhaps 5 per cent to 10 per cent of its full value, while in other cities it is difficult to obtain within 25 per cent of the full value obtainable under favorable circumstances.

SECURITY OF REAL ESTATE MORTGAGE BONDS IN THE UNITED STATES

These varied elements against which the margins on real estate are to guard, and with respect to which the European laws compel certain safeguards, can be equally guarded against by the mortgage bond companies in the United States, by the incorporation, in the trust agreement between the issuing company and the trustee for the bondholders, of covenants respecting the character of the mortgages to be deposited, the specific performance of

which may be compelled by a suit in equity, in addition to rendering the company liable at law for any breach. This feature of the security for real estate mortgage bonds is so vital that it may be well to quote in full from the trust agreement of an American mortgage bond company the article bearing on the mortgages which may be deposited:

1. That each and every mortgage, which it shall at any time assign to and deposit with the trustee under this agreement, shall be a first lien upon improved real estate in a city situated in the United States of America, having a population of not less than 40,000, for an amount not exceeding one half of the value of the mortgaged property as appraised for the company, except that in cities having a population of not less than 300,000 such mortgage may be for an amount not exceeding three-fifths of the value of the mortgaged property as appraised for the company, and that within the political boundaries of New York City such mortgage may be for an amount not exceeding two-thirds of the value of the mortgaged property as appraised for the company. The term "city" is used throughout this instrument in the economic sense, to designate an urban community, and without reference to its political boundaries.

2. That it will not assign to and deposit with the trustee under this agreement any mortgage on a single building which shall exceed an amount equal to \$2 for each inhabitant of the city in which the property is located.

3. That the aggregate unpaid principal amount of all mortgages forming portion of the trust fund upon property in any one city will not exceed in amount \$2 for each inhabitant of such city per \$1,000,000 of the company's bonds issued and outstanding and secured by this agreement.

4. That the aggregate unpaid principal amount of all mortgages forming portion of the trust fund upon property in any one city shall not exceed in amount 20 per cent of the total amount of the company's bonds issued and outstanding, unless such mortgages are upon property situated within the political boundaries of New York City.

5. That the aggregate unpaid principal of all mortgages forming portion of the trust fund

upon property in any city of from 40,000 to 70,000 inhabitants shall not exceed a total of \$40 per inhabitant, and in cities of from 70,000 to 100,000 inhabitants shall not exceed a total of \$50 per inhabitant.

6. That no single bond or mortgage shall be assigned to and deposited with the trustee under this agreement which shall exceed in principal amount 10 per cent of the capital and surplus of the company then outstanding.

7. That the appraised value taken as a basis for the mortgage loans is not to exceed the selling value determined by the company by careful investigation. In arriving at this value only the established utility of the property and the earning power under systematic management will be considered.

8. That such appraised value of properties, securing bonds and mortgages assigned to and deposited with the trustee under this agreement, shall be in all cases based on two appraisals, one of which shall be made by the company's appraiser in the city where the property is located, and the other shall be made by a representative of the company in the home office, who shall have personal knowledge of values in all the cities in which he makes appraisals. From time to time the board of directors shall issue instructions to the appraisers touching the methods to be employed in fixing the value of properties on which loans are to be made. No mortgage shall be assigned to and deposited with the trustee unless it has been approved by the executive committee of the company. In case any mortgage amounts to \$100,000 or over, a third appraisal shall be obtained, made by an additional appraiser selected by the company.

9. That the bonds and mortgages which it shall assign to and deposit with the trustee under this agreement shall in no case be secured by farm property, unimproved property, undivided interests in property representing less than the entire ownership of the property, leaseholds, or by churches, factories, clubs or theatres.

10. That mortgages on new buildings which are not completed and productive must not form more than one-tenth of the total of mortgages assigned to and deposited with the trustees under this agreement. No building loans shall be made in New York City without a guarantee, either of the completion of the building or of the repurchase of the mortgage by a corporation in good standing competent to take such a contract, nor in other cities without retaining at all

times from the moneys to be advanced upon the mortgage an amount which the company shall deem sufficient to entirely complete the building according to the plans and specifications.

11. That no real estate shall be acquired except to avoid losses under foreclosure, or to provide offices for the company's own use. All real estate acquired under foreclosure shall be promptly sold.

12. That fire insurance policies to an amount which the company shall deem sufficient to protect the mortgage in fire insurance companies in good standing shall be obtained by the company and deposited with the trustee.

13. That the time within which an action hereunder or upon any of the coupons or bonds of the company may be commenced shall be that now established by the laws of the State of New York, namely, twenty years from accrual of such right of action.

14. That so long as any of the company's bonds shall be outstanding, the company agrees that it shall have an annual audit of its books by independent auditors or chartered accountants, to be designated from time to time by the executive committee of the company.

15. That it will from time to time duly pay and discharge all taxes, assessments and governmental charges lawfully imposed upon the trust fund, or upon any part thereof, and all taxes, assessments and governmental charges lawfully imposed upon the interest of the trustee therein; provided, however, that the company shall not be required to pay any such tax, assessment or governmental charge so long as it shall, in good faith, by appropriate legal proceedings contest the validity thereof.

16. That it will do, execute, acknowledge and deliver, or cause to be done, executed, acknowledged and delivered, all and every such further acts, deeds, transfers and assurances for the better assuring, assigning and confirming unto the trustee each and every bond and mortgage which shall at any time be assigned to and deposited with the trustee or intended so to be, as portion of the trust fund, as the trustee shall reasonably require for better accomplishing the provisions and purposes of this agreement, and for better securing the payment of the principal and interest of the bonds issued and outstanding hereunder.

17. That it will not do or perform, nor voluntarily permit to be done or performed, any act or thing by which the security of this agree-

ment and the assignment and deposit of the bonds and mortgages, which shall from time to time form portion of the trust fund, can be in any way or manner impeached or impaired.

18. That it will well and truly at all times fully inform the trustee in writing, with respect to all payments of principal received by the company from or with respect to any bond and mortgage assigned and deposited hereunder, and will give the trustee such additional information touching any of such bonds and mortgages, or the property covered thereby, as the trustee may reasonably require from time to time.

It may be observed that, in addition to the European requirements, this company has obligated itself so to scatter its investments as to introduce an element of insurance against loss through depreciation due to a possible decline of prosperity of any single community, and, also, that there are important limitations in regard to the size of loans in proportion to the size of the city. In the United States a number of companies are now engaged in issuing real estate mortgage bonds. In some cases these bonds are issued by trust companies, and in other cases by mortgage bond companies especially formed for conducting the mortgage business in the European way.

Rates of Interest

As to the rates of interest which may be obtained on real estate mortgage bonds, these vary with the changes in interest rates on other classes of high grade securities, but in a general way it may be said that, in the United States where mortgage bonds are as yet a somewhat new type of security, these rates are slightly higher than rates on strictly first-class railroad or public service bonds, while in Europe the rates on mortgage bonds are ordinarily slightly lower

than on the same class of railroad and other bonds.

Allowing for the company's profit, borrowers in Europe, prior to the war, usually paid from $3\frac{1}{2}$ per cent to 5 per cent interest on their loans, or an average of somewhat less than 5 per cent with the annual amortization payment included, provided they had good security to offer. The saving in interest to borrowers can be appreciated when we recall that rates in foreign countries ranged from 7 per cent to 12 per cent just prior to the organization of the mortgage business in those countries, and private lenders today commonly obtain considerably higher rates of interest that are charged by the mortgage companies.

General Stability during Periods of Depression

In times of war mortgage bonds have been found to be more stable in value than any other class of security, even government bonds. In times of commercial panics, too, it is observed that these bonds actually rise in value, the exception being that in the period of inflation preceding a panic they are largely sold in favor of more speculative investments, while after a panic there is a desire to invest again in the safer securities.

Convertibility of Investment

The great advantage of the system of issuing bonds which are secured by mortgages, lies in the convertibility which it gives to mortgage investments. These bonds are quoted and dealt in on all the principal European bourses, and their quotations regularly reported in the leading financial papers.

Advantage to the Investor of Mortgage Companies

Looking at the whole matter from the economic point of view, it appears that the charge of the companies is small for the services rendered. For this difference in interest rate of about $\frac{1}{2}$ of 1 per cent between the bonds and the mortgages securing them, the investor obtains safety for his principal and interest, promptness in receiving payment, avoids loss of interest between investments, and can invest any amount he may wish at any time. In contrast with the ordinary mortgage loan, no inspection or appraisal of the property mortgaged is necessary, and the care of looking after fire insurance policies, taxes and assessments and other matters, is done away with; in addition to which, his investment is readily convertible. The borrower gains in having the business conducted by mortgage companies, because of their large resources and the promptness with which they can act on applications for loans, together with low rates of interest and liberal terms of partial or total prepayment; and, further, through the skill and experience of the companies in avoiding poor loans, owners of real estate are deterred from the waste of badly planned or located buildings, and an economic saving of real value is effected.

Advantages of Real Estate Mortgage Bonds

In comparing real estate mortgage bonds with other classes of bonds, there are only two such classes at all comparable in point of safety, namely, municipal and railroad bonds. Undoubtedly one of the principal advan-

tages which real estate has over other forms of security rests in the diversity of its usage. The advantage which railroads enjoy over industrials, in the lower rate of capitalization of their obligations, is largely due to the fact that while any one industry is subject to wide fluctuations in its profits, a railroad, which depends ordinarily on diversified industries, is only affected in a small degree by the failure of a few of the industries upon which it depends. Real estate, of a character suitable for mortgage security, enjoys the same advantage, since its value does not depend upon the success of any one tenant or form of business; and it has the further element of stability, as compared with railroad and public service securities, of being purely private property, and as such not subject to the governmental regulation which is lawful in the case of quasi-public corporations. Advantages which real estate bonds possess over municipal bonds in the United

States consist of a higher rate of interest, and the existence of tangible security supporting the promise to pay. Advantages which they possess over railroad bonds consist of the safety afforded by the fact that the real estate securing each mortgage is worth from 50 per cent to 200 per cent more than the amount of the mortgage, while many, if not most, of the newer railroads are bonded for their full cost of construction, their only margin of safety consisting of a capitalization of their possible excess earning power; and, also, of the fact that the capital stock of the issuing mortgage company, paid in cash, is pledged to make good any losses occurring through the mortgages.

In conclusion, it may be stated that where real estate bonds are properly safeguarded by law they furnish an attractive security of a high type, by combining absolute safety of the principal with a satisfactory rate of interest and easy convertibility.

Farm Loan Bonds Under the Rural Credits Act

By RICHARD S. STOYLE

Instructor in Finance, Wharton School, University of Pennsylvania

LONG-TIME MORTGAGE BONDS

BONDS secured by pledging with a trustee, mortgages payable over a long period of time in equal annual or semi-annual installments, are growing in favor. They are comparatively new in this country, but have been common in Europe for over a hundred years. Bonds issued by the federal land banks and joint stock land banks under the Rural Credits Act of June 16, 1917 are bonds of this type. The amortization or repayment of mortgage loans by annual or semi-annual installments over a long period of time has not been applied to loans on city property to any extent in this country, although the building association plan of small monthly payments on the shares of stock in the association, belonging to the borrower, who must also be a stockholder, resembles the plan of amortization by equal annual or semi-annual installments. The monthly payments on the shares may be applied by either the association or the borrower in payment of the mortgage loan.

Bonds of this type are almost invariably secured by farm mortgages and are issued by corporations and individuals loaning on farm mortgages as well as by federal land banks and joint stock land banks, under the Rural Credits Act.

Where the bonds are issued by corporations or individuals, the mortgages are pledged with a trustee as collateral, and the annual or semi-annual pay-

ments are apportioned to principal and interest in accordance with a plan or table of amortization, covering the amount of the loan and the number of years selected by the borrower for the repayment of the entire principal with interest. The greater the number of years, the smaller the annual or semi-annual payments, and the amount of the periodic payments applicable to payment of interest on the loan grows constantly less. The principal paid off is usually reinvested in mortgage loans and the mortgages pledged as collateral with the trustee, in order that the value of the collateral in the hands of the trustee shall always be equal to the amount of the bonds outstanding.

AMOUNT OF FARM LOAN BONDS

The bulk of the bonds of this type, however, in this country are farm loan bonds issued by federal land banks and joint stock land banks. The consolidated statement of the condition of the twelve federal land banks at the close of business on November 30, 1919, shows that the amount of farm loan bonds authorized was \$286,100,000 and the consolidated statement of the condition of the thirty joint stock land banks in this country at the close of business on November 30, 1919, shows that the amount of farm loan bonds authorized was \$56,135,000. These amounts are being constantly increased by new issues approved by the federal farm loan board.

THE RURAL CREDITS ACT

Regulation of Issues

The Act of June 16, 1917 known as the Rural Credits Act, throws every possible safeguard around farm loan bonds issued by the federal land banks and joint stock land banks. The government farm loan system, inaugurated by the act, is built around two types of land banks, federal land banks and joint stock land banks, both under the supervision of the federal farm loan board. This board consists of five members, including the Secretary of the Treasury and four members appointed by the President. It has the power to appoint the farm loan registrars for each district, land bank appraisers and land bank examiners, and may grant or reject the application of a federal land bank or joint stock land bank for leave to issue bonds.

Federal Farm Loan Districts

As required by the act, the federal farm loan board has divided the continental United States, excluding Alaska, into twelve districts and federal land banks have been incorporated and have commenced business in each district. The federal land bank in each district is required to include in its title the name of the city in which it is located. Federal land banks are now operating in Springfield, Mass., Baltimore, Md., Columbia, S. C., Louisville, Ky., New Orleans, La., Omaha, Neb., Wichita, Kans., Houston, Tex., Berkeley, Cal., Spokane, Wash., St. Paul, Minn. and St. Louis, Mo.

Minimum Capital

Each federal land bank is a federal corporation and must have a minimum

capital of \$750,000 divided into shares of \$5 each. The shares may be owned by individuals, firms, corporations or by the government of any state or of the United States. The United States government, however, receives no dividends on its stock, as the government subscription was primarily to insure the formation of a federal land bank in each district.

The act provides that after the subscriptions to the capital stock of any federal land bank by national farm loan associations shall amount to \$750,000 the bank shall apply 25 per cent of all future subscriptions to the capital stock, to the retirement of the original capital at par. It is undoubtedly intended that national farm loan associations shall eventually be the only stockholders of federal land banks. Only stock held by the government and by national farm loan associations has voting rights.

Federal Land Bank Reserves

Federal land banks and joint stock land banks are both required to build up reserves by carrying to a reserve account 25 per cent of net earnings until the account shows a credit balance equal to 20 per cent of the outstanding capital, and such balance must be restored, in case of impairment, before any dividends can be paid. After this reserve has reached the sum of 20 per cent of the outstanding capital, then 5 per cent of net earnings must annually be added to it. This is a wise and conservative provision of the act and it protects the bondholder, for it is further provided that, in case of default, for a period of two years, in payment of interest, amortization installments or principal on any loan

made by a federal land bank or joint stock land bank, the amount so defaulted shall be debited to this reserve account. While the care taken in placing loans makes it practically certain that such arrearages will be recovered in foreclosure proceedings, the proviso that the amount defaulted shall be debited to the reserve account keeps the collateral intact in the hands of the registrar. There is no provision in the act for double liability of stockholders of federal land banks, although this double liability is imposed on stockholders of national farm loan associations.

Appraisal of Security Offered by the Farmer

The most striking provision of the act is the extreme care taken to insure an accurate appraisal of the farmer's land and buildings offered as security for the loan to the farmer, and to obtain the benefit of local knowledge as to the moral hazard.

HOW LOANS ARE MADE BY FEDERAL LAND BANKS

Loans can be made by federal land banks only through national farm loan associations, consisting of ten or more farmers who are also borrowers or intending borrowers and, in districts where national farm loan associations have not been organized, through agents. Such agents must be banks, trust companies, savings banks or mortgage companies, chartered in the state where their principal offices are located. The agent must endorse loans made through it by the federal land bank and loans from an agent can not exceed ten times its capital and surplus.

Limitations on Use of Money Borrowed

Loans to farmers can only be made to the extent of 50 per cent of the appraised value of the land and 20 per cent of the permanent insured improvements on the land offered for security, and the uses to which the farmer may apply the proceeds of his loan are limited by the act and clearly set forth therein.

The secretary of the national farm loan association is required to inform the federal land bank loaning the money of any failure on the part of the borrower to properly apply the proceeds of his loan. Under the act, loans may be made to farmers (a) to provide for the purchase of land for agricultural uses, (b) to provide for the purchase of equipment, fertilizers and live stock necessary for the proper and reasonable operation of the mortgaged farm, (c) to provide buildings and for the improvement of farm lands and (d) to liquidate indebtedness. The use of the money borrowed from a federal land bank, on farm mortgage, under the act, for any other purpose or purposes constitutes a breach of covenant, for which the bank may demand payment of the loan and in event of non-compliance with the demand, institute foreclosure proceedings. The purpose sought to be accomplished by the framers of the act in making the national farm loan associations a part of the system, was, clearly, to obtain for the federal land bank the benefit of local knowledge as to the character of the borrower, the value and condition of the farm to be mortgaged and local conditions affecting the loan.

NATIONAL FARM LOAN ASSOCIATIONS

The national farm loan associations are corporations, in many respects very

similar to the building and loan association well known in the larger eastern cities, with a board of directors empowered to elect a president, vice-president and a loan committee of three members. The board of directors also chooses a secretary-treasurer and fixes his compensation. The secretary-treasurer need not necessarily be a member of the association, however. The secretary-treasurer must collect, receipt for and transmit to the federal land bank making the loan, payments of interest, amortization installments or principal arising out of loans made through the association and must report to the bank any failure on the part of the borrower to comply with the terms of his application or mortgage.

Membership of a Farm Loan Association

Every member of a national farm loan association must be a borrower and he must subscribe to shares of the association of the par value of \$5, to the extent of 5 per cent of the amount of his loan, although the purchase price for his shares may be included in the loan if this does not increase the loan beyond the limits laid down in the act. A member's shares are held by the association as collateral for his loan but the member receives the dividends and when the loan is paid off the shares are paid off and retired at par.

Double Liability of Shareholders

Shareholders of every national farm loan association are personally liable for its debts to the extent of the stock severally held, in addition to the amount paid in and represented by their shares. This is the double liability so familiar in the case of shareholders in national banks. This double

liability extends to all obligations of the association and it is therefore applicable to mortgages given by members of the association. The mortgages given by members of the association to the federal land bank making the loan are endorsed by the association, the association thus making itself liable for any deficiency in case of foreclosure.

Amount of Reserve Required

National farm loan associations are required to accumulate a reserve equal to 20 per cent of their outstanding capital account, by carrying to a reserve account each year, a sum not less than 10 per cent of its net earnings. After a reserve of 20 per cent is accumulated, then 2 per cent of net earnings is to be added to the reserve annually. Whenever the reserve is impaired the credit balance of 20 per cent shall be fully restored before any dividends are paid. In case of the voluntary liquidation of a national farm loan association, a sum equal to its reserve account must be paid to and become the property of the federal land bank in which the association is a shareholder. The reserve, therefore, is an additional safeguard for the loans made by a federal land bank to members of national farm loan associations.

First Mortgage Loans

Loans are made by federal land banks only on first mortgages and the loan committee of the national farm loan association, when the loan is made through the association, must first report favorably on the loan before the federal land bank will refer it to one or more of the appraisers appointed by the federal farm loan board. The appraiser must make a written report

favorable to the loan before the loan can be made by the bank.

A national farm loan association borrowing for a member from a federal land bank must subscribe for capital stock of the bank to the amount of 5 per cent of such loan. The stock, however, is held by the bank as collateral security for the payment of the loan, the association receiving the dividends. When the loan is paid off the stock is cancelled.

Earnings of Farm Loan Associations

As dividends paid by the federal land banks are the only source of earnings for national farm loan associations, fairness to borrowers requires that dividends shall be paid. If the borrower includes the amount necessary to pay for his association stock in his loan, he would actually receive on a loan of \$1,000, only \$950, for which he would pay at the rate of $5\frac{1}{2}$ per cent on the whole thousand dollars or a rate of over 5.7 per cent, if he receives no dividend on his stock in the national farm loan association. If he receives a dividend of 6 per cent on his stock, however, the interest rate on his loan is reduced to a little less than $5\frac{1}{2}$ per cent. Dividends at the rate of 6 per cent have already been paid by six of the federal land banks and more will be added to the list within a short time. Borrowers through an approved agent of a federal land bank must subscribe for capital stock of the bank making the loan, to the extent of 5 per cent of the amount of their loan.

Amortization Plan for Repayment of Loan

The act provides, "that every mortgage must contain an agreement pro-

viding for repayment of the loan on an amortization plan by means of a fixed number of annual or semi-annual installments, sufficient to cover, first, a charge on the loan, at a rate not exceeding the interest rate in the last series of farm loan bonds issued by the land bank making the loan; second, a charge for administration and profits, at a rate not exceeding 1 per cent per annum on the unpaid principal, said two rates combined constituting the interest rate on the mortgage; third, such amounts to be applied on the principal as will extinguish the debt within an agreed period, not less than five years nor more than forty years. No loan on mortgage to be made at a rate of interest exceeding 6 per cent, exclusive of amortization payments."

The minimum and maximum amount of loans to any one borrower is fixed by the act at \$100 and \$1,000. But the federal farm loan board in its last report strongly urged that these limits should be made \$500 and \$25,000.

SECURITY FOR FARM LOAN BONDS

The farm mortgages securing loans made with such care and under such stringent regulations are available as collateral security for an issue of farm loan bonds by the land bank making the loan. The mortgages are deposited with the farm loan registrar appointed by the federal farm loan board for each land bank district and the land bank must make written application to the farm loan board through the registrar for approval of such issue of bonds. The farm loan board after appraisal of the security offered by the land bank, grants, in whole or in part or rejects entirely, such application. If the application to issue farm loan bonds is

granted, the mortgages remain in the hands of the registrar as trustee for the bondholders and the bonds are issued by the federal land bank making the application.

Bonds Issued

The bonds are coupon bonds in series of not less than \$50,000, to be paid and retired according to rules and regulations prescribed by the federal farm loan board and are redeemable at the option of the issuing bank at any time after five years from the date of issue. The bonds issued to date are payable in twenty years and are issued in denominations of \$25, \$50, \$100, \$500, and \$1,000. Bonds may not be issued in excess of twenty times the capital and surplus of the issuing bank.

Liability of Federal Land Banks

The act provides, "That every federal land bank issuing farm loan bonds shall be permanently liable therefor, and shall also be liable, upon presentation of farm loan bond coupons, for interest payments due upon any farm loan bonds issued by other federal land banks and remaining unpaid in consequence of the default of such other land banks: and every such bank shall, likewise, be liable for such portion of the principle of farm loan bonds so issued as shall not be paid after the assets of any such other land bank shall have been liquidated and distributed: Provided, that such losses, if any, either of interest or of principal, shall be assessed by the federal farm loan board against solvent land banks liable therefor in proportion to the amount of farm loan bonds which each may have outstanding at the time of the assessment." This security is of course in

addition to the security given by the pledged mortgages and all other assets of the issuing land bank. It is hard to see how any loss can come to the holders of such bonds.

The annual or semi-annual payments are made by the mortgagor to the land bank making the loan and if the mortgage is pledged with the registrar, the payments on account of principal constitute a trust fund in the hands of the land bank or joint stock bank receiving the same and must be applied or employed in the manner directed by the act, in purchasing farm loan bonds, lending on first mortgage or in the purchase of United States government bonds. The application of such funds, directed by the act strengthens the security of the farm loan bonds outstanding, as the farm loan bonds, first mortgages, United States government bonds or cash, constituting the trust fund must be deposited with the registrar in trust, as substituted collateral in the place of the sums paid on account of the principal of mortgages held by the registrar in trust.

BOND ISSUE OF JOINT STOCK LAND BANKS

Security.—The act also provides for the issue of bonds by joint stock land banks, secured by the deposit of first mortgages on farm land with the registrar. The joint stock land banks are corporations authorized by the act, incorporated for the purpose of carrying on the business of lending on farm mortgages and issuing farm loan bonds. They are federal corporations and may be formed by any number of natural persons, not less than ten. They are not authorized to commence business until capital stock to the amount of

at least \$250,000 has been subscribed and one half paid in cash and the balance subject to call by the board of directors. A charter must also have been issued to it by the federal farm loan board.

Stock Ownership.—The stock of joint stock land banks may be owned by individuals, firms and corporations, but not by the United States government, and each shareholder has the same voting privilege as shareholders in national banking associations. The capital must be entirely paid up before the bank may issue bonds. Stockholders have double liability for all obligations of joint stock land banks, including farm loan bonds issued by the particular bank in which they are stockholders.

Bond Issues.—The bonds of joint stock land banks must be issued in series of not less than \$50,000, and in denominations of \$25, \$50, \$100, \$500, and \$1,000. They are to be paid and retired in accordance with rules and regulations prescribed by the federal farm loan board and bonds issued to date are payable in twenty years. The joint stock land bank issuing farm loan bonds has the right to redeem them at par and interest on any interest date after five years from issue. The interest rate can not exceed 5 per cent. The bonds are the direct obligations of the joint stock land bank issuing them and no bank is responsible, in any way, for the bonds of any other bank.

Rate of Interest.—Joint stock land banks have the same restrictions as federal land banks with respect to the rate of interest they can charge on mortgages, but the rates are not subject to review by the federal farm loan board and they are not restricted as to the amount of each loan nor as to the purpose for which the money loaned may be used by the borrower. The borrower must be a farm owner, however, and the loans must be on first mortgages on farm lands within the state in which the principal office of the bank is located, or within some one state contiguous to such state.

Amount of Bond Issue.—No joint stock land bank may issue or obligate itself for outstanding farm loan bonds in excess of fifteen times the amount of its capital and surplus. The bonds issued by joint stock land banks are secured by the deposit of approved first mortgages on farm properties with the registrar and the procedure for the issue of joint stock land bank bonds is the same as in the case of federal land bank bonds.

Tax Exemptions.—The bonds of both federal land banks and joint stock land banks are free of all federal and state taxes, including income tax, and are unquestionably investments of the highest merit. The bonds of federal land banks yield, at the present time, about 4.35 per cent to optional date and the bonds of joint stock land banks yield about 4.50 per cent to optional date.

Reclamation of Swamp Lands and the Modern Drainage Bond

By J. SHEPPARD SMITH

Vice-President, Mississippi Valley Trust Company, St. Louis;

Chairman, Reclamation Securities Committee, Investment Bankers Association of America, 1913-1919

AMOUNT OF SWAMP LAND TO BE RECLAIMED

IN the development of our country it was only natural that the farm lands which were more readily susceptible to cultivation should have been occupied first, and that the overflowed and swamp lands should have been overlooked entirely for years. It was only after the absorption of the more desirable farming land, which resulted from the increase of population, and after the consequent and more intensive development of the country, that attention was directed to the reclaiming of the overflowed lands, and that human ingenuity made it possible to bring such land under cultivation. These swamp and overflowed lands awaiting reclamation, it is estimated, total 125,000 square miles, which is more than two and-one-half times the area of the entire state of Illinois, and if reclaimed would afford homes for 12,500,000 persons. At a valuation of \$100 per acre, \$8,000,000,000 would be added to the wealth of the nation.

ATTITUDE OF THE GOVERNMENT TOWARD RECLAMATION

While the vast opportunities afforded in this direction are not altogether generally appreciated, the United States government in recent years has

recognized the importance of the subject and has provided, through the United States Reclamation Branch of the Agricultural Department, a means of scientific study of the question. This department, under the management of intelligent and efficient experts, has made progress both in the education of the people at large, and in the improvement of the means by which this acreage could be more readily reclaimed. The National Drainage Congress, whose membership embraces some of the best authorities on the subject, has, through the earnest and efficient work of its officers and members, and by the influence of its annual conventions, attracted national attention and contributed greatly to the further development of the work.

DISTRIBUTION OF THE SWAMP LANDS IN THE UNITED STATES

While these unreclaimed lands are scattered throughout practically every state of the Union, there is a particularly large acreage in those states tributary to and drained by the Mississippi River, known as the Mississippi Valley, the area of which is 1,240,050 square miles, a little less than 50 per cent of the entire area of the United States, and in excess of the total area of all the countries of the European

belligerents, excepting Russia. Of the 27,800 miles of navigable waterways in the United States, the Mississippi Valley system contains 15,000 miles. In the states embraced in this valley there are yet millions of acres awaiting development. In the state of Louisiana, alone, there are said to be 10,196,605 acres of swamp or marsh lands which should be drained either wholly or in part; in Arkansas, 5,912,300 acres; in Mississippi, 5,760,200 acres; in Missouri, 2,439,600 acres; and in Alabama, 1,479,200 acres. Such lands, with their rich alluvial soil, are, when reclaimed, exceptionally fertile and possess even greater agricultural possibilities than those more fortunately situated by nature. These lands are either swamp or marsh. Swamp lands are those which are under water at only certain seasons of the year and are sufficiently free from overflow at other periods to give the forest trees a chance to grow and develop. Marsh lands are those which are under water almost the entire season, and, therefore, have no growth upon them except grasses and water plants.

DRAINAGE PROBLEMS

Drainage problems may be divided into two classes, namely, gravity and pumping. Gravity projects are those where the drainage may be accomplished by a natural flow of the water into main and lateral ditches provided for its outlet. Pumping projects are those where it is necessary, on account of the district being below the water level, to remove the water by means of pumping. The latter are by far the most difficult and expensive problems, both in their original construction and subsequent maintenance and operation.

EARLY ATTEMPTS AT DRAINAGE

The first attempts at drainage were entirely by individual efforts, and these, for manifest reasons, largely proved unsatisfactory, and were followed by a coöperative effort on the part of various land holders whose properties were contiguous to each other. Necessarily the progress in its early stages was slow and many difficulties were encountered. To begin with, it was difficult for the interested parties to unite on a plan that would be satisfactory to all concerned, and at the same time secure the outlet for the drainage, where it was necessary to carry the ditches across the lands of those who were not benefited by the project, as well as to agree on the personnel of the organization under whose auspices the work was to be conducted. Difficulties, too, presented themselves in adjusting the benefits or damages that would accrue to the landowners therein. While these efforts, in the majority of instances, were not successful, they were the means through which the attention of the various states was attracted to the importance of the subject.

ORGANIZATION OF MODERN DRAINAGE DISTRICTS

It became evident that if anything was to be accomplished on a comprehensive basis it would be necessary to form drainage districts into political sub divisions, or at least into public corporations with proper power under the law to form the necessary organizations with which to conduct the work on an intelligent basis, and to subject the land contained therein to an equitable tax in proportion to the benefits received, as determined by an authoritative source. To assess the benefits

therein and determine the damages on surrounding territory, proper measures were enacted by the various legislative bodies which have resulted in the creation of the modern drainage district as a municipal corporation capable of issuing tax secured bonds. These laws differ in some of their essential features in the various states, and in quite a number of states several different drainage acts exist. Nearly every state at this time possesses satisfactory drainage laws. It is to be regretted that no systematic record has been kept by the various states as to the amount of bonds issued and outstanding, nor as to the number of acres of land reclaimed. As a consequence, no accurate data can be given on the subject. In 1916 the Reclamation Securities Committee, of the Investment Bankers Association, made a determined effort to collect such statistics, but found that, in view of the above facts, it was impossible of accomplishment.

THE CIRCUIT COURT DRAINAGE ACT OF MISSOURI

As a concrete case it may be desirable to outline the salient features of the principal drainage act in Missouri. This state possesses a drainage law as good as, if not better, than any of the other states; in fact, several of the states have to a large extent followed the Missouri act in the framing of their laws.

While there are several such acts in existence in this state, the one most commonly used is known as the Circuit Court Drainage Act, passed in 1913. This provides that the owners of a majority of the acreage in any contiguous body of swamp or over-

flowed land, situated in one or more counties in the state, may form a drainage district, for the purpose of reclaiming such lands, by framing articles of association in which is contained a full description of the lands sought to be included in the district as provided by the act, together with the names of the owners of the same, who thereby obligate themselves to pay a tax which may be assessed against their respective lands and to pay the expenses of organizing and of making and maintaining improvements. These articles are filed in the office of the clerk of the circuit court of the county, or, in the event of the lands being situated in more than one county, in the county in which the larger portion of the land is situated.

Proper notice by newspaper publication, as prescribed by the statute, is then given, by which the persons interested are notified to appear at court and show cause why the district should not be organized. If the court over rules the objections the district is organized and declared a public corporation. A certified copy of the decree is filed with the secretary of the state within sixty days, and in the office of the recorder of deeds in each county having lands in the district.

A meeting of the landholders is then held, through proper published notice, giving ample time to interested parties to appear, at which meeting a board of supervisors consisting of five landholders is elected, two of whom must be residents of the counties having lands in the district. Each landholder is entitled to one vote for each acre of land owned by him, either in person or by proxy. The persons elected to the board determine by lot their terms of

office, which are one, two, three, four and five years, respectively. Each succeeding year one member of the board is elected for five years, to fill the term of the retiring member. Proper oath is required for the faithful performance of his duties. The board elects its own president and secretary, and must adopt a seal and keep a record of its proceedings. It likewise appoints a competent civil engineer who may, with the approval of the board, appoint assistants and consult with others. The engineer so appointed must survey the lands, file with the board annual reports which shall contain maps and profiles of the surveys, and a plan for reclamation of the lands, which, if adopted by the board, becomes the plan for reclamation. A preliminary tax of not to exceed fifty cents per acre may be levied on all lands in or next to the district to provide for the payment of necessary organization expenses. Within twenty days after the adoption of the plan, the secretary of the board files a certified copy thereof with the clerk of the circuit court, and the board thereupon must ask the court to appoint three commissioners to assess the benefits and damages, who must reside in the state and must not be the owners of any land in the district, nor be related, within the fourth degree of consanguinity, to any landowner therein. A majority of the commissioners control on all questions. Proper oath is taken, in writing, for the faithful discharge of their duties, at a meeting held within ten days after notice of their appointment by the circuit clerk. The secretary of the board of supervisors is ex-officio secretary of this board and is required to

attend all meetings and to furnish the necessary information as required by the statute. Their duties begin within thirty days after qualifying. The premises are viewed, the benefits are assessed and the damages adjudged. Public roads, railroads, etc., are assessed according to increased physical efficiency and decreased cost of maintenance. The commissioners cannot change the plan of reclamation.

Proper notice is then given by the clerk of the circuit court by publication, in accordance with the statute. Exceptions may be filed by landowners within ten days from the date of the last publication of the notice. The court then confirms or dissolves the organization. If dissolved, a uniform tax is levied to pay the costs incurred. If confirmed, a certified copy of the decree is furnished to the secretary of the board of supervisors, who, in turn, files a copy in each county having lands in the district. Appeals are allowed only on the two following questions: First, whether just compensation has been allowed for property appropriated; second, whether proper damages have been allowed for property prejudicially affected. Broad powers are given the board of supervisors to construct the necessary improvements or to let the contracts. Proper bond must be given by each contractor, for the faithful performance of the work. The engineer must make a full report once each year to the board, upon the work done, with such suggestions as he may deem proper.

A tax is promptly levied by the board on each tract of land benefited, in proportion to the benefits assessed, sufficient to pay the cost of executing the plan, plus 10 per cent for emergen-

cies, together with the interest which will accrue on the bonds then issued. This is certified in book form by the president and secretary of the board and made a permanent record with proper seal affixed. Each year the board levies such a part of the taxes as may be necessary, which is collected by the collector of the county in the same manner as other taxes, full information being given him by the district. He must furnish proper bond, and penalties are provided for his failure to return the proceeds promptly to the district. The tax so levied, together with the penalties for non-payment, becomes a lien upon each tract, second only to the liens for state and county taxes. Action for collection of delinquent taxes must be instituted, within six months after December 31 of each year, under the same procedure as in state and county taxes. Title acquired at foreclosure sale is liable to payment of future annual levies. Should the proceeds from the sale of any land for delinquent taxes prove insufficient to pay the tax, the board has the right to reassess the entire district to cover such deficiency.

Proper bond is given by the treasurer and his accounts must be audited annually. The board exercises full jurisdiction over all matters and has the right of eminent domain either within or without the district, in accordance with the provisions of the statute. Actions under this act do not abate by reason of the death of any landowner. Proper notice, however, is given to the heirs at law, in accordance with the statute. Neither does any appeal delay any work. The board of supervisors may petition the court to amend or change the incor-

poration decree. Objections may be filed, which are promptly determined by the court.

Bonds may be issued not to exceed 90 per cent of the total taxes levied, with interest not exceeding 6 per cent per annum, payable semi-annually, maturing serially within twenty years, beginning not later than five years after date. Such bonds cannot be sold at a price less than ninety-five cents on the dollar, and accrued interest. In the event the tax levy proves insufficient to pay the bonds and interest, the board must make a sufficient additional levy not exceeding, however, the aggregates of the benefits already adjudicated. Each year the board levies a maintenance tax to pay current expenses and maintain the improvement in repair, and this tax is limited to 10 per cent of the net benefits. The owners of 25 per cent or more of the acreage may petition the organizing court for a readjustment of the assessment of benefits when any material change of property values has transpired, but as a basis, only, in levying the maintenance tax. Proper notice of such petition is given to landholders. If the court orders a readjustment, commissioners are appointed with full powers to act.

Two or more adjacent districts may unite, providing proper notice is given to each landowner therein, and a majority of the acreage votes favorably. In this event the petition is presented to the court in the county containing the largest acreage. Objections may be filed and the court acts in the same manner as upon petition on original organization. The board may extend the corporate life of the district by calling an election and receiving the

assent of the majority of the acreage represented.

Should the executed plan of reclamation prove insufficient, amended plans may be designed and additional assessments made, or if the tax levy should prove insufficient an additional levy may be made not exceeding the total benefits. The board may also remove at pleasure any officer, attorney or employe. The board may add additional land to the district, provided, however, that after the completion of the plan this cannot be done without the written consent of the board and the approval of the district engineer. Landowners so desiring, or the district itself, may petition the court for annexation of additional lands, and from the court's decision an appeal may be prosecuted by the landowners or the district.

Districts organized under any previous law may elect to come under the provisions of this act, under the same procedure as in the creation of a new district.

Attention might be especially directed to that portion of the statute which prescribes that, in the event of failure of the proceeds resulting from the sale of land for taxes proving sufficient to pay the delinquent taxes, the board of supervisors has the right to levy an additional tax on the entire district to make up the deficit, and which, in effect, provides a thorough safeguard to the investor for the full payment of principal and interest in accordance with the tenor of the bonds.

DRAINAGE LAWS OF MISSOURI AND ARKANSAS COMPARED

While, as stated, nearly every state possesses satisfactory drainage laws,

it might be of interest, merely as a matter of comparison, to mention the differences between the laws of Missouri and Arkansas—two adjoining states, whose laws, while both excellent, differ to some extent in some of their essential features, which differences are recited below.

Organization of District

In Arkansas the petition praying for organization need be signed only by three or more owners. In Missouri it is necessary that it be signed by owners of a majority of the acreage. In Arkansas, if the district lies wholly within one county, the petition is presented to the county court. If it lies in two or more counties, it is presented to the circuit court of that county embracing the largest amount of land. In Missouri it is presented to the circuit court in all cases. In Missouri the supervisors may levy an organization-tax of not exceeding fifty cents on the acreage. In Arkansas there is no such provision. In Missouri all those signing the petition obligate themselves to pay the tax, and the case cannot be dismissed as to any one of the signers without the consent of all his co-signers.

Determination of the Plan of Reclamation and the Assessment of Damages and Benefits

In Arkansas the court appoints three commissioners who, assisted by an engineer, view the land, determine the plan of reclamation, and assess the damages and the benefits to the land embraced in the district. In Missouri the court appoints five supervisors who constitute the governing board of the district, and who in turn appoint three

commissioners. These commissioners then view the land and assess the benefits and damages. In assessing benefits they do not consider those benefits which may be derived from any improvements other than those contemplated by the proceedings. The supervisors themselves, with the assistance of an engineer, determine the plan of reclamation which the commissioners have no power to modify. In Arkansas any owner dissatisfied with the assessment of damages may demand an assessment by a jury, providing such demand is made within thirty days after the filing of the assessment.

Taxes

In Arkansas the tax is levied by the commissioners; in Missouri, by the supervisors. (The board of commissioners in Arkansas, corresponds with the board of supervisors in Missouri, and not with the Missouri board of commissioners.) In Arkansas the tax levy may be paid by anyone so desiring within thirty days after the levy, otherwise it is payable in annual installments, but no installment can be for more than 25 per cent of the total amount. In Arkansas the tax is a lien preferred to "demands, executions, encumbrances or liens whatsoever created." In Missouri the tax is a lien inferior only to "general, state, county, school and road taxes."

Proceedings for Failure to Pay Tax

In Missouri the land is sold in the manner provided for enforcement of delinquent taxes. In Arkansas the tax collector reports delinquent taxes to the board of commissioners. They then add 25 per cent to the amount

and bring an action in the chancery court for jurisdiction. If this is not done within sixty days any bondholder may bring such action. An error in the name of the owner is not fatal and the proceedings are strictly in rem. In case of judgment rendered against the land it is offered for sale subject to the lien of the tax due but not paid. In case the land is not sold it is not again offered for one year nor until an attorney *ad litem* has been appointed. He notifies the commissioners or directors of all other improvement districts taxes for which constitute liens against the land, and he also notifies trustees for bondholders of the fact that the land has been offered for sale for delinquent taxes, but has not been sold. Upon the return of his report to this effect the court then orders that the land be sold free of the encumbrances of all other improvement districts subordinate to the lien of the tax for which it is sold, but subject to all subsequent installments of all taxes against it. Any balance from the proceeds of the sale remaining after the tax and court costs have been paid is distributed by the court as seems equitable. If any bond or coupon is not paid within thirty days after maturity, any bondholder may sue in the chancery court for a receiver for the district to collect the taxes and foreclose on the land, paying the proceeds pro-rata among the bondholders.

Failure of Collector to Collect

In Missouri the county collector of taxes must give a bond to the drainage district with two sureties in an amount double any probable assessment to be levied in any one year. In case the collector, for any cause, neglects to

collect the drainage tax, a penalty of 10 per cent of the amount of tax which he has failed to collect is added to that amount and he and his sureties are liable therefor. In Arkansas the collector is fined one hundred dollars for each individual from whom he, for any reason, fails to collect the drainage tax while collecting other taxes. He may be fined a like amount for each person whose tax he fails to record in the drainage tax book.

Bonds

In Arkansas bonds must mature within thirty years; in Missouri, within twenty years. In Missouri bonds must be payable in annual installments in from five to twenty years. In Arkansas they may mature either serially or otherwise.

Readjustment of Assessments

In Arkansas the commissioners may alter the plan of reclamation. The modified plan is filed with the court and notice is given and parties interested are heard and the court enters its finding of fact. If the assessment is thereby rendered inequitable, any land owner who incurs additional damages is allowed such damages, to be paid by the district, but is not allowed to have the benefits assessed against his land to be reduced in the amount of the damages. The original benefits remain unchanged and the land remains liable to taxation up to the amount of such original benefits. Any damages allowed by reason of such change are inferior to the claims of bondholders. In Missouri, upon petition of 25 per cent of the owners stating that there has been a material change of values rendering the assessment of benefits

inequitable, the court, if it finds this to be true, appoints three commissioners who reassess the benefits and, through substantially the same proceedings as in the original assessments, the benefits may be modified and readjusted as is equitable. It may be added that in neither state can any change be made in such a way as to jeopardize the obligation or the security of any bonds that may have been issued.

For many years all drainage statutes were most strictly construed, it being the then current theory that governments could not levy taxes merely to improve lands privately owned, but only to further some distinctly public purpose, or, in the exercise of the police power, to prevent disease, remove nuisances, or conserve the public health. In some states the statutes still require, before a drainage or reclamation project can be initiated, that there must be a court finding that the proposed improvement will be a public utility or that it will promote the public health or prevent disease. In the course of time, however, a more liberal view was obtained, and, with a changing and now sympathetic attitude on the part of the owners of lands which are to be affected and taxed for the improvements, many of these swamps and marshes have been redeemed, and the way is at last open for the reclamation of perhaps all the remainder of such lands.

SUCCESSFUL DRAINAGE PROJECTS

While many large and successful drainage projects have been undertaken in recent years, by far the largest and most pretentious undertaking has been that of the Little River Drainage

District, located in southeast Missouri. It might be well to give a brief history of this district as an example of what can be accomplished in practical drainage.

Little River Drainage District in Missouri

The acreage of the Little River Drainage District lies partly in each of the following six counties: Cape Girardeau, Stoddard, Dunklin, Scott, New Madrid and Pemiscot. There are 488,050 acres of land within its boundary lines, embracing territory approximately 90 miles long, with an average width of 10 miles. There are 160 miles of railroads within the district. Not an acre of land is more than six and one-half miles from the railroad, the average distance being three and one-half miles. The land had been subject to overflow from the Little River and the Castor River, the waters of these rivers flowing into the district from the north. This district was organized in 1907. Prior to that time several small drainage districts existed in lands that are located either wholly or in part in the territory now embraced in the above district. It became evident at that time, to some of the larger owners of land in that section, that if this vast acreage was to be reclaimed as a whole, a larger and more comprehensive plan would have to be carried out, and one that would provide not only for the drainage of the land but also for the control and diversion of the waters from the Little and Castor rivers. In order to provide full relief it was necessary to create a diversion channel and retaining basins, which would turn the flow of these waters into the Mississippi

River at the head of the district, thus preventing their overflowing the district at certain periods of the year, which had previously occurred. After proper petitions had been received from a sufficient number of the land-owners in this territory, the Little River Drainage District was created in November, 1907; bonds to the amount of \$5,000,000, bearing 5½ per cent interest were issued, dated April 1, 1913, and maturing serially in annual installments, beginning April 1, 1919, up to and including April 1, 1933.

Necessarily, where such a large acreage was involved, and where portions of previous drainage districts were to be merged into this one, many legal obstacles presented themselves, and it was not until 1913 that these were finally adjudicated, by a decision of the supreme court of the state of Missouri, in favor of the district. While this decision perfected in every respect the legality of the bonds, nevertheless, the issue was further supported by the approving opinion of several of the ablest municipal-bond lawyers in the country. An able board of supervisors had previously been created in accordance with the law, with headquarters at Cape Girardeau, Missouri, which is located about three miles north of the northern boundary of the district. This issue was disposed of in 1914, and the work on the district was then undertaken. On account of the unusual size of the district it had unusual problems to meet. Great care was exercised by the board in its selection of engineers, and besides having its own chief engineer it had the approving opinion, upon the drainage plan inaugurated,

of five of the leading hydraulic engineers of the country.

At the time when this project was first undertaken, approximately 90 per cent of the land was not subject to cultivation; today, about 75 per cent of the land can be cultivated, and within four months it is expected that the work will be fully completed and all the land will be open for cultivation.

It was found in 1918, that, due to the increased cost of operation and additional work found necessary, the proceeds of the \$5,000,000 bond issue would not be sufficient to complete the work. Under the authority of the law an additional \$1,000,000 of bonds were issued and promptly disposed of. It is estimated that before the work is finally completed, another issue of at least one-half million dollars of bonds will be necessary. These bonds, it is expected, will be issued in the early part of 1920, and it is the firm belief that the work upon the district will be finally completed and the drainage plan perfected at least by July 1, 1920. When this work is completed, the land which was almost wholly a dismal swamp, will become a very fertile and rich farming territory.

In 1907, the average value of the lands in the district was \$10 to \$15 per acre. Today, the land will easily average \$75 per acre, while the total bonded debt will, upon completion, be approximately \$14.50 per acre. It will be seen from this that taking the highest average of the land in 1907—namely, \$15 per acre—and adding the bonded debt of \$14.50 per acre, the land has more than doubled in value. It might be well to mention that in some instances land especially well

located in this territory has sold as high as \$225 per acre since the drainage plan was inaugurated. As a further evidence of the improvement in that section as a result of this drainage project, the little town of Bragg City, Missouri, having a population of some five hundred people, with modern buildings and paved streets, is in existence upon a site that was nothing but a swamp in 1914.

In diverting the waters from the Castor and Little rivers to the Mississippi River, great care had to be exercised in the engineering features, particularly regarding the diversion channel and the retaining basins. A spillway was constructed in order to give relief should the impounding of these waters create a greater pressure than the basins could withstand. Unless such relief had been provided the construction might have given way and disastrous consequences to the district would have ensued. Under extreme conditions the spillway provides for a partial overflow of the water into the district, which, though it might result in some partial damage to the crops, would be far better than the greater damage that would be sustained by both life and property in the event of a serious break in any portion of the levee, which might result from too great pressure. It is not anticipated that any such occurrence will transpire, but it was thought essential to provide for such a contingency should it arise.

The payment of the principal and interest of any municipal bond, according to its tenor, is necessarily dependent upon prompt collection of the taxes. It might be interesting to note that since its inception this district has

collected each year approximately 98 per cent of the drainage tax assessed against it, which will unquestionably compare favorably with that of any municipality in the United States, either large or small.

MARKET FOR DRAINAGE BONDS

While fifteen years ago drainage bonds had a comparatively narrow market, which was to some extent limited to those states located in the middle west where the drainage problem was better understood, they have gradually increased in popularity, and today enjoy a very substantial position in the eyes of investors throughout the entire country. This has been due to a better and more general knowledge of the subject, and to the record these issues have made in the payment of their principal and interest. Many eastern bond houses, which until a few years ago would not consider handling drainage bonds, are today eagerly buying large issues throughout the entire Mississippi Valley. The fact that such issues bear a higher return on the investment than the general obligations of counties and cities, and possess the same tax exemption features, has made them especially popular. There is no doubt that drainage bonds issued under proper auspices constitute a safe investment. Great care must be exercised, however, upon the part of the investment houses handling such issues. A careful examination of the land must first be made, and it must be determined, beyond any reasonable doubt, that the work to be undertaken will result in an enhancement of the value of the land to a greater degree than the cost of the improvement. It is impor-

tant that at least a majority of the landowners in the district be in favor of the project, as a number of dissatisfied landholders would naturally seize the first opportunity to bring court proceedings and attack the legality of the issue. Such litigation, whether successful or not, would necessarily throw a cloud upon the bonds, and would also result in preventing the investment houses from promptly distributing them, or, in the event of their having been resold, would create uneasiness upon the part of the investors holding them. The amount of the debt per acre represented by the bonds, must necessarily vary in proportion to the value of the land securing the issue. Such debt should, however, always bear a proper and conservative relation to the appraised value of the district.

It should be seen that the affairs of the district are to be handled by a competent corps of officers and supervisors. In a majority of cases the bond houses are now insisting (where the law does not) upon an annual audit of the books of the district, to insure its affairs being kept in proper shape and to prevent the possibility of any loss of funds through defalcation, or otherwise. Above all else, it must be certain that the engineering features have been passed upon by competent and practical engineers. Where any doubt as to the feasibility of the plan exists, consulting engineers should be called in so as to safeguard the project as far as it is possible to do so. Great care should be exercised, also, to see that at least one competent engineer be retained throughout the construction period, in order to see that the work is

properly completed in accordance with the original plan, or, where necessary to make any changes, that such changes should be made under able direction. It is also very essential that the work when completed should be maintained in excellent condition and kept in efficient working order.

The importance of the legal phases should never be overlooked. All conservative and careful dealers in bonds exercise every caution to see that the legal steps in every issue purchased by them have received the approving opinion of a competent legal firm thoroughly experienced in municipal

issues, and in some instances issues are supported by two or three different opinions, especially where any doubt exists in the minds of one firm upon any legal point involved.

Where proper precautions have been taken as suggested above, and the bonds are recommended by a well-known and responsible house, the investor may feel no uneasiness when purchasing, as to the safety of the investment. Drainage bonds, properly issued and conservatively constituted, are a safe investment and are generally recognized as such by those competent to judge.

The Need for American Investment in Foreign Securities

By JAMES SHELDON

Lee, Higginson and Company, New York

COMMERCE AFTER THE WAR

THE problem of reviving normal commercial and financial relationships between the nations which engaged in the Great War presents questions whose complexity is baffling. At present only certain general facts can be recognized, and these group themselves about two questions: How can commerce, by which the world has come to support itself, be restored to a permanent and self-supporting basis? How will the results of this restoration differ, if at all, from pre-war conditions? Nobody will deny that Americans desire to retain the foreign markets which they have entered during the war and that this is the most important difference for us to establish between the pre-war and post-war periods. Partial answers to all of the questions involved are proposed from all sides, but whatever the starting point of discussion, any analysis of the problem of restoring normal commerce leads inevitably to a consideration of foreign exchange rates, which serve as an index by which the resultant of many factors may be judged.

FACTORS UNDERLYING THE FLUCTUATION IN EXCHANGE RATES

The General Economic Situation

The influences which bring about fluctuations in exchange are part and parcel of the general economic situation which must be examined hastily in its relation to international trade.

Before America's declaration of war she had been called upon to furnish immense quantities of material both raw and manufactured. Our manufacturing facilities were increased in response to the demand for our products. In payment, gold was sent to us from Europe until one-third of the world's total supply is now in our hands. After the United States entered the war the pressure to increase industrial facilities continued, but the gold shipments from Europe ceased when our government adopted the policy of advancing funds to the Allies to cover their purchases in this country. Today the United States finds herself with a vast store of gold, which is at present useful chiefly as a basis of credit, with materially enlarged manufacturing capacity and still engaged, in part, in satisfying abnormal foreign needs. The question naturally arises whether export markets are necessary to maintain our factories in full operation. If our domestic power to consume goods has kept pace with the growth of our power to produce them, the answer is that we are as independent of Europe as formerly, but if our plants will produce merchandise in excess of the domestic demand, we must retain our foreign markets or face the prospect of curtailing production. Each individual's power of consumption depends upon the quantity of goods which his income will buy, and, although there is much conflicting evidence on this point, there seems rea-

son to believe that commodity prices have advanced almost as much as wages and salaries, and, consequently, that ability to buy has not largely increased in this country. With much greater output and but slightly, if any, greater power at home to absorb this output, we must contrive to continue selling abroad or look forward to industrial depression.

Decreased Production in Europe

Opinion is united here and abroad that the salvation of Europe lies in production, and the nations concerned are constantly heeding more closely this necessity; but they are almost helpless unless provided with the materials on which and with which to work. Mills, factories and railroads must be rebuilt; machinery and rolling stock, destroyed, worn out by over-work or carried away, must be replaced; cotton, steel, copper and raw materials generally must be supplied; and finally, the populations must be fed until the cycle of purchase, manufacture and sale can be solidly reestablished. Confronted with this task the nations of Europe find themselves almost without reserves of raw material. Their agricultural production is greatly curtailed through reduction of man power and devastation of producing areas and available capital for reconstruction and the purchase of raw material is sorely depleted.

On the other hand, it must not be forgotten that devastation is not general, and that "Europe has a great volume of fixed physical capital, a productive soil, mines and forests, fisheries and water power, which in the aggregate constitute enormous wealth, and which, with a relatively moderate outlay of new capital, can be

made highly productive again. Europe has an intelligent population, educated and skilled in industry. Europe has a great body of scientific experts, a great body of highly able financiers, a body of great statesmen. Europe has a body of skilled and enterprising business men, trained in the management of vast industries, with fine traditions of financial honor, accustomed to paying their debts. Europe has an admirably worked-out body of commercial law, and an upright judiciary trained in the administration of that law." It is inconceivable that such facilities will not combine to produce wares which we shall be glad to buy in the future, as we have been in the past. The elements of uncertainty are the time required for European industry to resume normal production, the means which will be employed to this end, and the resultant effect upon America's position in foreign trade.

Depletion of Reserves

The war has had another general effect upon all the countries that took part. By diverting the output of industry from normal fields of consumption to use in military destruction, many wants of people everywhere have been left unsatisfied. Even though reserve stocks have been exhausted, or nearly so, there is an accumulated demand which is now seeking satisfaction; and it is necessary besides to renew the stocks normally carried to insure regularity of distribution in spite of a varying rate of production. It is through this period of re-stocking that we are now passing.¹

Naturally, this depletion of reserves

¹ December, 1919.

and accumulation of demand has progressed further in Europe than in this country, with the result that we are exporting merchandise to the limit of the financial and shipping facilities at the disposal of foreign purchasers. Europe can as yet produce very little in excess of her own needs to sell to us. These conditions have brought about a constant and vigorous demand for American dollars with which to settle for merchandise purchased, while there is no counter-demand from us for foreign currencies with which to pay for our imports. This movement has been carried to a point where the value of the money of Europe, as expressed in dollars—that is, exchange—has fallen to levels hitherto unknown in financial history,² rendering purchases in this country doubly dear to the British, French and Italian importer. Nobody can tell with certainty how long the present movement will continue, but present exchange rates will sooner or later operate as definitely to check our sales abroad as would a tax on exports.

FACTORS INVOLVED IN SETTLING THE TRADE BALANCE

So far it has been assumed that the nations of Europe would pay for the goods which they are buying from us with the proceeds of their sales to the United States, and this assumption is, for practical purposes, correct in so far as events to date have shown. It must not be forgotten, however, that the normal means of settlement for adverse trade balances, so-called, is the shipment of gold. This means,

however, for the time being, is impossible because, in the first place, the ratio of metallic reserve behind the paper currency of Europe has been allowed to fall as far as is safe, and in the second place, we do not want more gold which, with its attendant phenomena of increased credit and purchasing power, would lead to a further advance in prices. There remains credit. If this country can contrive the means of granting credit to our former allies, they can continue to buy from us until they become once more able to offset their purchases in the world's markets by their sales, otherwise their operations will be restricted to the lowest point possible by the disadvantage of present exchange rates.

The Granting of Credit to Europe

The alternative which confronts this country's business deserves examination. Should we fail to devise some method by which credit for purchases in America can be granted to Europe, her peoples will be in precisely the same condition as the manufacturer equipped in every way to do a profitable business, but lacking the sufficient liquid capital. He may be able to scrape along and gradually accumulate sufficient profit to avail himself fully of his plant and markets, but this is a slow process during which those interested in such a concern must forego dividends for the sake of future returns. Europe can proceed along these lines, but let us remember that the dividends which will not be paid until some distant and uncertain date are the war debts due to our government from the Allies. On the other hand, by lending well within the limits of safety we can place Europe upon a

² On December 12, 1919, the following quotations were reached: Sterling 3.65½, French francs 11.84, Lire 13.60.

basis of profitable production within a comparatively short time, and reasonably expect a prompt return of the money advanced by the United States during the war. Would not the capitalist interested in a sound concern be considered stupid if he failed to make an investment which would render many times the sum involved productive instead of unproductive?

Methods of Extending Credit

The credit which is required by the countries of Europe must extend over a number of years. Their need is not temporary, but will last until the sums which we may now lend can be replaced by profits accruing from the operations of industry. This fact immediately eliminates from the field certain sources of credit. The commercial banks, which must be constantly prepared to meet the demands of their depositors, cannot tie up their funds over long periods of time. The government might renew its war time policy of lending, but hope of action in this direction was abandoned when an authoritative statement was issued that further financing of Europe was a problem to be solved by the business community.

Special legislation has been introduced in the houses of Congress to meet the necessity of extending credit to the countries of Europe. The Edge Bill, which provides for federal incorporation of institutions engaged primarily in foreign and international banking, promises to be enacted into law before the present year is out.³ This measure will undoubtedly help the general situation, but it can be

reasonably questioned whether such organizations, as yet non-existent, can command the resources necessary to satisfy in any measure the needs of our Allies for time credit, for the future operations of such institutions will depend upon the measure in which they can attract the funds of the American investor, who has so far been timid in loaning his money abroad. The War Finance Corporation is authorized by special act to make advances to exporters and to banks carrying loans to exporters, the total not to exceed \$1,000,000,000 in amount and no advances to run for more than five years. Under the McLean Act national banks are permitted to divert one half of the 10 per cent of their capital, which could formerly be invested in foreign banking corporations, to investment in foreign finance corporations. The Owen Bill, as introduced on July 22, 1919, called for a \$1,000,000,000 corporation to make advances to foreign governments or corporations, but Congress has taken no further action on this proposal which was drawn to fulfill so useful a purpose. As a whole, the measures enacted cannot be considered adequate to meet the present situation, for only the War Finance Corporation Act can give rise to operations of longer duration than the customary short self-liquidating transactions of foreign trade, and the limit of five years, in spite of the possibility of renewals, will deter foreign borrowers from undertaking to finance fixed investments by this means. With the government no longer advancing funds to Europe, and the banks unable, from the nature of their functions, to extend these credits, the investor, individual and corporate,

³ The president's signature was affixed to this bill on December 24, 1919.

remains as the sole source to which our Allies can appeal in their need.

Foreign Investment Securities

It is well known that Europe offers the same wide range of securities to her investors as does this country. Government, municipal and industrial issues, all present investment and speculative opportunities. At the present time of crying need from abroad for American funds there is but slight difference in the benefit to the nations of Europe through American purchase of the different classes. The usual financial machinery and the close relation between government and industry established during the war can reasonably be counted upon to place balances in this country at the disposal of those whose requirements are the most pressing. This state of affairs may not continue, however, and in any case it is desirable that the borrower come as closely as possible into relation with the lender in order to avoid the delay, expense and uncertainties of indirect dealing, particularly if cumbersome official routine is involved.

Comment upon particular European securities is out of place here, but certain elements of strength enjoyed by industry abroad deserve consideration. The fact that the nations of Europe are relatively small geographically has led them always to seek foreign markets. Before the war a constant demand for their goods from many widely scattered parts of the world was taken as a matter of course. This broad distribution has been largely responsible for the stability of economic conditions in the stronger nations of Europe, for local depression in

any part of the world has been unable to affect them as it does those countries whose manufactures are largely consumed at home. The investor in British ship-building or French textile shares need fear a decline in orders much less than the holder of American industrial stocks. There can be no doubt that former consumers of European wares will seek them again as commerce becomes normal, for the fame which they have enjoyed, almost since trade began, has not been dimmed by an interruption of deliveries for five years. In addition to tradition and habit, the present exchange rates will lead the buyers of the world to satisfy their needs in Europe whenever possible.

Advantages of Foreign Securities

Through the purchase of foreign securities an additional advantage will accrue to the investor by reason of a wider geographical distribution of the properties in which he is interested. A succession of crop failures or economic depression in any one section of the world will then affect but a portion of his holdings. The introduction of stocks and bonds issued by seasoned European concerns can only add strength to any list of holdings. There is also, at present, the possibility of receiving a greatly increased yield from foreign investments through the expected return of exchange to normal.

The Significance of Loans Through Purchase of Securities

That there is in Europe at this time large opportunity for the soundest sort of investment for American capital cannot reasonably be doubted. The effect of such loans, however, is not so clear. In the first place, the proceeds

of foreign financing in this market will permit the European countries to purchase in this country the machinery and raw materials needed for immediate use without bidding for dollars in the exchange markets, that is, without causing further declines in exchange rates. The disadvantage imposed upon American goods is already severe enough without being further increased, and every additional decrease which can be avoided will mean larger sales abroad. With the added equipment and material which will result from any loans now made to Europe, her industries will be able more quickly to produce goods for export and set in motion the process which will eventually bring exchange to normal and restore the happy conditions of peaceful commerce. With every advance in exchange rates, the purchasing power in this country of all Europe's available capital will increase, larger supplies can be bought, greater quantities manufactured and exported; and thus progressively, by a cumulative process, the flow of commerce in both directions between this country and Europe will be reestablished, perhaps more quickly than now seems probable. Some such process as this is sure to take place sooner or later in the case of the stronger European nations, and it is not the nature but the duration of the operation that will be affected by America's purchase of foreign securities. If the capital of this country is far-sighted enough to seize the present opportunity, Europe's recovery can take place quickly and to the unquestionable advantage of the United States; but if we refuse to lend our aid at this time, the recovery will be slow and will entail the loss of our

foreign markets which have become essential to the prosperity of American industry.

Foreign Investments and Foreign Markets

There is another phase of the question of foreign investment which does not concern Europe and the restoration of exchange rates, that is the necessity to avoid being undersold in all markets, including our own. It is a well known fact that whenever a nation has made liberal investments outside of its own borders, a lively commerce between the lending and borrowing countries has arisen. Investment of this type is usually made for the purpose of developing new areas, and partakes of a permanent character. This country has reached a stage in economic development where our capital would naturally seek foreign outlets were it not for the fact that our investors feel that their wealth is less safe in foreign lands than in our own. This prejudice must be overcome if we are to reap the advantages of our natural resources and accumulated wealth and take our place among the great commercial nations of the world. Without markets industry is destitute; and without foreign investment foreign markets are not to be had. The alternative is to lend our money to other nations more far-seeing and enterprising, and to send them our goods to sell in the markets that they have created with our money, conceding the first place in profit and influence and the means of maintaining them to foreign nations.

When the pressing needs of Europe have been satisfied, our financiers

must turn to South America, Africa, Asia and the East Indies, where our goods have become known during the war through the inability of these markets to purchase elsewhere. The ties that have been established must be cemented by sharing their enterprises in furnishing capital. Their names and industries must become known to us as well as our own, their

problems must become our problems until the nations of the world will turn to us with the assurance of sympathetic reception and an understanding consideration of their needs. Then, and then only, shall we have the international marketplace which our resources justify, and only then will the richest nation of the world be worthy of its wealth.

Foreign Government Bonds

By THOMAS W. LAMONT

Of J. P. Morgan and Company, New York City

THE field of investment embraced by government bonds has been enormously widened during the last six years, coincidently with the vast increase in national indebtedness. The history of national debts from the Middle Ages up to the time of the outbreak of the World War is an interesting one, and there are many absorbing questions of national policy, finance and economy connected with it. But our subject is more limited: it has to do only with the situation as regards foreign government bonds in this country. It is of interest, however, to note that national debts of the world have increased by \$190,000,000,000, or about 475 per cent, in the last six years, and, as a natural consequence of this increase, the variety of government bonds and the number of investors in them have been greatly multiplied. These results have made themselves manifest in all the investment markets of the world; but nowhere, perhaps, in greater measure than in the United States.

FOREIGN INVESTMENTS OF OTHER COUNTRIES

Great Britain.—The older countries of the world have, for many generations past, been experienced and wise in the investment of their funds in the government obligations of other nations. Great Britain and France, heretofore the foremost creditor nations of the world, have always been the largest investors in such securities. The

foreign investments of the British people, at the close of 1913, amounted to roughly \$20,000,000,000 and were placed all over the world. It is calculated that about \$4,800,000,000, or 24 per cent of this, had been invested in loans of colonial and foreign governments. Great Britain's present private foreign investments (*i.e.*, not taking into account loans by the British government to other governments) are estimated at about \$16,000,000,000 but we have no accurate knowledge of what proportion is now represented by colonial and foreign government bonds. Figures compiled from a recent (London) Stock Exchange Official List give some idea of the number and variety of foreign government bond issues still held by British investors. They show that out of a total of 4,771 securities of all sorts dealt in on the London Exchange, there are 623 bond issues of foreign or colonial governments, states and municipalities.

France.—In France, the story is much the same, except that the French people have placed a larger proportion of their foreign investments in government securities. France, too, has not gone so far afield in making her foreign investments as has Great Britain. Most of her capital loaned abroad has gone to other European countries. The total foreign investments, of all descriptions, of the French people are estimated to have amounted in 1914 to some \$10,000,000,000, of which

from \$5,000,000,000 to \$6,000,000,000 (or 50 per cent to 60 per cent) were represented by foreign government bonds. The Paris Bourse quotation list at the present time shows listings of 327 foreign government and municipal securities, out of a total of 2,298 issues of all varieties. There are also a number of securities listed exclusively on the departmental Bourses, such as, Lille, Lyons, Marseilles, Bordeaux, Toulons and Nantes, and a number which are not listed on any Bourse but are negotiable in the bank market or "over-the-counter" as we would say in this country.

Other European Countries.—Although the foreign investments of other nations, notably Germany, Holland, Belgium and Switzerland, are not so extensive as those of Great Britain and France, yet those nations, too, have had long experience with foreign investments and foreign government bonds.

PRICE MOVEMENT AND SOLVENCY RECORD

What has been the experience of the old countries with foreign investments? In general, it is a fact that foreign government bonds have formed "the cream" of their investment markets. The bonds of the European countries in particular have enjoyed high rating, and have been considered sound, conservative investments. The evidence of this is found in the quotations for those securities, covering a period of more than one hundred years to 1914. In that period, despite armed conflicts now and then, and despite intervals of economic and financial depression, the rate of return on government securities has ruled throughout at the lowest levels; in other words, at the highest grade of credit. The following table shows the yields on British Consols and French Rentes at their highest and lowest prices by ten-year periods, from 1801 to 1914:

Period	British Consols		French Rentes	
	Yield at High Price of Period	Yield at Low Price of Period	Yield at High Price of Period	Yield at Low Price of Period
1801-1810.....	3.80%	5.97%	4.28%	7.60%
1811-1820.....	3.56	5.58	5.98	6.67
1821-1830.....	3.10	4.37	3.48	5.45
1831-1840.....	3.15	4.01	3.46	6.52
1841-1850.....	2.95	3.81	3.47	9.23
1851-1860.....	2.94	3.52	3.49	5.50
1861-1870.....	3.12	3.54	4.00	5.91
1871-1880.....	2.98	3.29	3.44	5.96
1881-1890.....	2.77	3.18	3.11	4.05
1891-1900.....	2.41	2.95	2.85	3.25
1901-1910.....	2.66	3.19	2.93	3.20
1911-1914*.....	3.04	3.61	3.08	3.64

* To July 30.

It is true, of course, that investments in the government bonds of new or backward countries yield higher rates

of return. They are less seasoned and investors, therefore, require a higher rate of interest. Investments in such

countries have not always been fortunate and there have been some losses.

But the solvency record of the governments of the world, when examined as a whole, compares most favorably with that of other classes of borrowers. The council of the Corporation of Foreign Bondholders in London, in each of its annual reports, gives a table showing the government bonds, which, at that time, are in default. An examination of these tables for the thirty years, 1882 to 1911 inclusive, shows that the average amount of government bonds in default annually was about \$126,000,000. A rough compilation shows that the average total amount of government bonds outstanding for the same period was approximately \$32,500,000,000. In other words, the average amount of government bonds in default each year per \$100 of such bonds outstanding was \$0.39. This compares most favorably with corresponding figures that have been compiled for three important classes of American investment securities, as follows:

Gas and Electric Companies	\$0.37
Railroads	1.84
Industrials.....	2.07

CHARACTERISTICS OF GOVERNMENT BONDS

Broadly speaking, government bonds may be divided into two classes: First, those which are simply promises to pay or acknowledgments of indebtedness; second, those which are promises to pay and in addition have some special security. The government bonds of the United States and of the chief European countries fall, for the most part, into the first class. In Europe, in many cases, these obligations have no fixed date of maturity,

but are in the form of so-called "perpetual" bonds. In these, it is generally stipulated that they may be redeemed on a specific date, at the option of the government, at a specified price, but no date is specified on which they mature. They are, in fact, annuities bearing the privilege of redemption on the part of the government. This form of obligation has never met with great favor among American investors, who are accustomed to bonds maturing with promise to pay on a fixed date.

Government obligations of the other class, that is, those with pledge of special security to assure the payment of principal and interest, have been issued usually under special circumstances. Examples of this class are the Japanese Tobacco 4½ per cent Sterling Bonds, secured by a charge on the annual net revenue of the Japanese Tobacco Monopoly, the United States of Mexico 5 per cent External Loan of 1899, secured by special hypothecation of 62 per cent of the customs receipts of the country, and the Chinese Government 5 per cent Hukuang Railways Loan of 1911, secured by a first charge upon certain provincial revenues.

ADVANTAGES OF GOVERNMENT BONDS

In the last analysis, however, no matter what the special security of a loan may be, its payment, both as to interest and principal, depends on the good faith, and honor, and ability to pay of the promisor government. The objection is sometimes made against government bonds, that they are not subject to foreclosure as is the mortgage bond of a railroad or industrial enterprise, and that there is no means of collecting, against the will of

the debtor nation, the interest or principal, except by force. This argument loses its force when we consider the disadvantages and onerous burdens to which a nation must submit when it repudiates its obligations, especially its external obligations. It is forced to do without new funds from external sources until it rehabilitates its credit, and the terms of this rehabilitation generally prove to be severe. Moreover, its credit among the other nations of the world is severely injured and it may be decades before it has lived down the evil reputation which inevitably results from repudiation of debts. Not only is the national government's credit impaired, but the credit of the nation's political subdivisions, of its business interests and enterprises of all kinds, large and small, is affected in the money markets of the world. The closely interwoven fabric of international credit and trade in the world today gives moral considerations greater force than legal measures. A nation will hesitate long and fearfully before repudiating its national obligations, especially its external debts payable in other countries. For while, perhaps, there is no such thing as a technical first mortgage upon the resources and the ability of a nation to pay, yet its obligations, payable in foreign countries, have always, in fact, been so considered and have been the first to be taken care of in time of difficulty.

Safety.—The advantages of government bonds, and especially of foreign government bonds, as investments are many, but it will suffice to mention only a few. First, note their safety, which is shown by the course of prices and solvency record previously stated.

The safety of government bonds rests, of course, on the power of governments to tax their people. A government obtains its revenues for debt, service and other purposes by levying taxes which are, in effect, a first charge upon the wealth and income of its people.

Ready Marketability.—Another advantage of government bonds is their ready marketability. In most cases, government loans are made for large amounts and have a wide distribution in many markets. The investor is thereby assured of a broad market for his bonds throughout their life. If the issue is made negotiable in several countries, this marketability is greatly increased and, in addition, protection against an abrupt fall in prices in one market is likely to be afforded by offsetting conditions in other markets. Closely allied to this consideration is the advantage found in the geographical distribution of investment risk. By distributing investments over the international field, the investor may give play to the law of averages and neutralize the effects of violent fluctuation in his investments as a whole. This territorial distribution of risk has long been practiced by European investors to advantage.

High Interest Rate.—At the present time, another advantage to be gained by investment in foreign government bonds is the high interest return which can be obtained. Obligations of the strongest nations of Europe, payable in dollars, may be bought in our market at prices to yield as much as 9 per cent or over. Reference to the table showing the price range of British Consols and French rentes shows that this represents an unprecedented opportunity.

Aid to Foreign Trade.—One of the most potent arguments to be adduced in favor of investing in foreign loans at this time is the aid which they afford in offsetting the present huge merchandise balance of trade in our favor, and in making possible further purchases of foodstuffs and raw materials by European countries for reconstruction purposes. This phase of the subject will be discussed in a later section of this paper.

AMERICA'S INVESTMENTS ABROAD

The experience of American investors with foreign government bonds is of recent origin. Among the more important of such issues, publicly offered in this country during the pre-war period, may be mentioned the loans to Mexico in 1899, 1904, and 1913; to Cuba in 1904, 1909 and 1914; to San Domingo in 1908 and 1913; to Argentina in 1909; to Bolivia in 1909; to China in 1911; and to Japan (three offerings) in 1905. Details as to the conditions which made these loans attractive and advantageous to the American public may be passed over, but we should note a characteristic common to most of them, namely, their international character. Most of the loans mentioned were offered simultaneously in several foreign markets—*e.g.*, London, Paris and Berlin—as well as in New York. The bonds were made payable as to principal and interest, at the option of the holder, in several foreign currencies, as well as in dollars. A world-wide market for them was created. This was an important consideration in the eyes of investors, for assurance was thus given that the holders could always sell in the most favorable

market. Financial depressions in this country would not, presumably, similarly affect the markets for such securities in other countries.

According to reliable compilation, there had been issued in this country and was unmatured and unredeemed up to August 1, 1914, a total of roughly \$235,000,000 of foreign government bonds. It is a matter of conjecture, however, as to how much of this total still remained, at that time, in the hands of our investors. Advantage had been taken of European markets and it is believed that most of these securities had found their way to foreign markets by the time the World War broke out.

In the last five years American investors have purchased foreign government bonds in large volume. In the first place, the necessity for the belligerent nations to conserve all their capital for their own use in carrying on the war led to the closing of their capital markets to countries all over the world, that had been accustomed to borrow from them. Naturally these borrowing countries turned to the United States as the only source of vast accumulated wealth still open to them. Demands of this sort were soon followed by the needs of the belligerent countries for funds with which to pay for their immense purchases of supplies in this country. Their merchandise imports from us were many times their exports to us. And they had, in a comparatively short time, shipped us a huge sum of gold—all they could well afford to spare, and perhaps all that we, from the standpoint of inflation and our own well-being, could well afford to receive. It was the part of wisdom

for both sides to arrange credits for the settlement of balances growing out of the immense foreign purchases in America. The first transaction of this nature (except for a loan of \$45,000,000 to Canada in August, 1915) was the issuance of the \$500,000,000 Anglo-French Five Year 5 per cent External Loan, in October, 1915. The salient features of this loan are well known. The needs of Great Britain and France in this country were covered by the proceeds of this loan until well into the next summer. Then both countries again entered our investment market for funds, this time separately. And from then (August, 1916) on, up to the time that the United States entered the war in April, 1917, bonds of the principal

Allied powers and of other governments were offered to American investors almost continuously. The sum total of these offerings was large. The loans were well taken and absorbed by our investors.

The table below shows, by countries, the amount of foreign government bonds held in this country before the war, the amounts issued and paid off during the war and, finally, the net amount outstanding at the present time. It should be noted that this compilation is restricted to foreign *government* bonds and does not include any loans which have been made to provinces, municipalities, industrial enterprises or bankers. Neither does it include loans made by the United States government to foreign governments.

FOREIGN GOVERNMENT BONDS IN THE UNITED STATES
(In thousands of dollars)

	Amount Outstanding July 31, 1914	Issued August 1, 1914 to November 1, 1919	Paid off August 1, 1914 to November 1, 1919	Amount Outstanding November 1, 1919
Great Britain.....		\$1,517,818	\$648,231	\$869,587
France.....		627,000	353,000	274,000
Russia.....		85,000	10,000	75,000
Italy.....		25,000	25,000	
Belgium.....		10,000		10,000
Greece.....	\$500		25	475
Norway.....		8,000	3,000	5,000
Sweden.....		30,000	5,000	25,000
Switzerland.....		45,000	10,000	35,000
Austria.....	12,500		12,500*	
Germany.....		20,000	18,000*	2,000
Canada.....		295,000	145,000	150,000
Newfoundland.....		13,000	5,000	8,000
Argentina.....	9,250	152,590	93,800	68,040
Bolivia.....	2,200	3,400	1,279	4,321
Cuba.....	41,220		5,440	35,780
Mexico.....	16,000			16,000
Panama.....		3,171	260	2,911
Peru.....	1,000			1,000
Santo Domingo.....	14,150		1,282	12,868
Uruguay.....		4,646	4,646	
China.....	7,500	12,750	7,000	13,250
Japan.....	130,478		27,926	102,552
Total.....	\$234,798	\$2,852,375	\$1,376,389	\$1,710,784

* Approximate.

The total of \$1,710,000,000, for foreign government bonds outstanding at the present time in the United States, is subject to modification by the amount of such bonds as have been resold in foreign markets. However, these resales probably do not amount to more than \$200,000,000, at the most, and offsetting them is the considerable amount of internal loans of foreign governments purchased by American investors. In any case, it is apparent that the private investments of the American people in the obligations of foreign governments is still small as compared with the investments of the British and French peoples in similar securities. In this connection, it should be remembered that our government has loaned about \$9,640,000,000 to foreign governments.

RECENT TENDENCIES

The extent to which these foreign government issues are listed on the New York Stock Exchange is limited, compared to the listings of similar securities in London and Paris. About forty-six issues make up the total of \$1,718,000,000 of foreign government bonds outstanding here. Of these, only nineteen, or less than one-half, are listed on the New York Stock Exchange. The listed bonds are, for the most part, those issued during the pre-war period. Many of the loans lately floated here have been of short maturity and for that reason it has not been found advisable or necessary to list them. Of \$2,852,000,000 of foreign government loans placed in this country in the period from August 1, 1914, to November 1, 1919, \$1,376,000,000 were paid off at maturity in the same period.

Another characteristic of the war-

time loans, which has already been mentioned, was the direct connection they had with our foreign trade. Almost without exception the loans were made to settle, in part, the export trade balance owing us; in other words, the loans were made for money spent in this country.

A number of the war-time loans took a form which, up to that time, had not been used for government obligations. Such were the collateral loans, secured by deposit, with corporate trustees, of securities of American railroads and other corporations, of obligations of the government of the Dominion of Canada, of the Canadian Provinces and municipalities, and of the governments of other countries, such as, Argentine, Chile, Cuba, Norway, Sweden, Australia, Japan, Egypt, and India. Loans collateralised with such securities were made to Great Britain in November, 1916, and in February, 1917, and to France in 1917. These secured loans matured in one or two years and have been paid off now, except for one lot of British secured notes maturing November 1, 1921.

Several of the foreign government obligations issued during the war have carried a conversion privilege. For example, the United Kingdom of Great Britain and Ireland One- and Two-Year $5\frac{1}{2}$ per cent Secured Notes, issued in February, 1917, to the amount of \$250,000,000, were convertible, at the option of the holder, at any time before maturity, into twenty-year $5\frac{1}{2}$ per cent bonds, payable February 1, 1937, and not subject to prior redemption. This opportunity to obtain twenty-year obligations of Great Britain yielding a high rate of interest—as compared with the yield formerly obtainable on

obligations of the British government —was availed of by many investors and about \$142,000,000 of the notes were converted. The Anglo-French Bonds, maturing in October, 1920, likewise carry a conversion privilege. They are convertible into fifteen to twenty-five-year joint and several obligations of Great Britain and France, bearing interest at $4\frac{1}{2}$ per cent per annum. The \$100,000,000 French Two-Year $5\frac{1}{2}$ per cent Secured Notes issued in April, 1917, were also convertible into long term bonds. The holders of these notes, however, had, in addition, an option to take payment in francs instead of dollars, and they elected to take the profit on exchange when the notes fell due, in April, 1919, rather than to convert them.

The foreign government loans which have been issued in this country since the Armistice was signed already show a tendency away from the special features characteristic of the war-time issues. In the first place, the tendency is toward more permanent financing, nearly all of the loans maturing in ten years or later. There is evident a desire to avoid the disadvantages of short-term financing, and to set the maturity of the loans far enough into the future to carry the borrowing governments over the reconstruction period.

At the present time, the extremely low level of foreign exchange rates offers possibilities for profit not ordinarily obtainable from investments in foreign government bonds. For example, the issue of British three-year notes and ten-year bonds recently (November 1, 1919) sold in this country are convertible, at the option of the holder, at 100 and interest, into National War 5 per cent Bonds, Fourth

Series, at 100 and interest, sterling exchange being computed, for the purpose of conversion, at the fixed rate of \$4.30 to the pound. The National War Bonds are payable in sterling, at maturity in 1929, at 105 per cent. Assuming that the purchaser of a \$100 three-year note at the issue price of \$96 or of a \$100 ten-year bond at \$96.25 converted his note or his bond, he would receive £23: 55: $2\frac{2}{5}$ d. principal amount of National War Bonds. As sterling exchange improves, his profits from conversion will increase. If he sold the War Bonds in the London market at 100 he would realize \$113.19; if he held them until paid at maturity at 105, he would realize \$118.85, assuming, in both instances, that sterling exchange were at parity—\$4.8665 to the pound. In a word, he has a ten-year call on sterling exchange at \$4.30 to the pound and in the meantime receives a handsome rate of return on a sound investment payable in dollars.

The possibilities of profit combined with safe investment obtained by purchase of such securities are available to all buyers of bonds, and especially to American importers. The importer can, at one and the same time, invest in a prime security yielding a high return on the money invested, and can also obtain a call upon exchange with which to make payment for future importations. When sterling exchange improves, as in the long run it is bound to do, the importer who has invested in such securities will be able to buy goods in the foreign market much cheaper than competitors who have not made such investments. Of course, the purchase by American investors, at the present time, of the internal loans of the European nations, is also attractive

on account of the prevailing low level of exchange rates. On the other hand, no promise of payment of principal and interest in dollars is obtained.

THE PROBLEM OF OUR FOREIGN TRADE

America's Export Balance.—America has enjoyed a prodigious foreign trade—her exports for the five years ended June 30, 1919, amounted to no less than \$25,500,000,000. Her imports were less than half of that sum. Consequently, she piled up a merchandise export balance slightly less than \$14,000,000,000. In part settlement of that balance, America received, of course, large shipments of gold. American investors also repurchased a great amount of securities formerly held by European investors. But by far the largest part of that huge export balance was settled by the extension of credit. Calculations have been made indicating that \$11,700,000,000 was settled in that way, including up to June 30 last, \$9,100,000,000 credits granted by the United States government to foreign governments. Before America's entrance into the War, American investors had, as we have seen, purchased large loans of foreign governments issued in this country to pay for their purchases of goods in American markets.

Government control of private business has now largely ceased and government loans to finance foreign trade have practically come to an end. And

yet the excess of merchandise exports from the United States over imports in the first ten months of 1919 amounts to \$3,388,000,000—almost a billion dollars more than in the same period in 1918. America cannot go on indefinitely piling up such an export balance. Exports will gradually contract and imports will gradually expand. But even with a gradual working toward equilibrium, the export balance will be very great for some time to come. The world, and especially Europe, urgently needs food, clothing and a long list of other things. America can supply them. And it is important that America should supply them, unless her manufacturers and her merchants and her working people are prepared for an abrupt cutting off of exports and widespread dislocation of business.

If America wants to help in the reconstruction of Europe, if America wants to continue her profitable export trade, she will have to sell her goods on credit—not all, but a good part. American investors—every American who saves—will have opportunities to invest a portion of their savings abroad. They will have opportunities to buy foreign government bonds, to lend to foreign business enterprises and to purchase equities in foreign industries.

America may well follow in the footsteps of the older countries in the field of foreign investment. Along that path, America will discharge her duties and her capacity for universal service, not without profit to herself.

Foreign Corporate Bonds in the American Market

By ARTHUR J. ROSENTHAL

Bernhard, Scholle and Company, New York City

THE FINANCIAL POSITION OF THE UNITED STATES

IT is almost a truism to state that the position of the United States, economically and financially, has completely altered as the result of conditions created by the World War. From an economic point of view, the United States is now the one great country of the world that has in abundance those commodities necessary for the rehabilitation and reconstruction of devastated Europe, and for the up-building and development of other less advanced countries. Financially, the United States is the one remaining large country with sufficient liquid capital to finance not only its own needs but those of other countries as well.

The speeding up of production in the United States during the past few years has been so tremendous that a reservoir of liquid wealth has been created such as was deemed incredible a few years ago. It is not so many years since, when the reproduction of capital in the United States was not sufficiently large to satisfy the growing demands of industry and commerce in our own country, that a large amount of foreign capital had to be utilized for the development of our industries. Our sales of commodities to foreign countries and the liquidation of our indebtedness to foreign creditors have completely reversed the situation. In other words, we are now in a position, from a material point of view, to embark upon a policy of foreign

investment. Political and humanitarian considerations urge us forward. It therefore remains to examine such a policy from a practical point of view and to determine what steps are necessary to attract the interest of American investors to foreign government and corporate issues.

EXTENT OF FOREIGN LOANS IN AMERICA

Some progress has already been made in the direction indicated. In December, 1913, out of some 2,200 securities quoted on the New York Stock Exchange, there were fifteen foreign issues and practically all of these were the obligations of foreign governments or municipalities. Since that time a number of our allies have placed large loans in this country. A few neutral countries have also placed their issues here and, in addition, substantial amounts of capital have been contributed for the financing of foreign commercial needs through acceptance credits and other credits arranged with our banks. The volume of such loans in the aggregate has been quite substantial, but from the point of view of diversity of issues, very little headway has thus far been made. The New York market, in the strictest sense, is still a domestic market. It has not yet become an international money market where foreign nations and particularly foreign corporations habitually apply for their funds, and, therefore, in no sense does

it compare with the older established markets abroad, such as London, where, according to available statistics, in 1913 practically 47 per cent of all the issues dealt in were foreign issues.

It is therefore obvious that thus far only a portion of what is required in the nature of international financing has been accomplished. As has been pointed out before, we are the only great country whose capital the ravages of war have not impaired to any appreciable extent. Unless, therefore, we are willing to pursue a policy of isolation, willing to wash our hands of the responsibility of placing a devastated world upon its feet, willing to look out for our own immediate needs first, and for those of the rest of the world afterwards, we shall be obliged to take active measures to participate in international finance to an extent never before realized. It is not only these considerations, however, which urge us forward upon a policy of increased participation in international finance.

THE WISDOM OF FOREIGN INVESTMENTS

Commercial Advantage

The development of our industries, from a quantitative point of view, as well as from the point of view of technique, has been amazing during the past few years. The production of our commercial and industrial corporations is probably much more than sufficient to supply our normal present domestic needs. It is therefore evident that unless we find other markets for our increasing production, we will be faced with the necessity, when Europe begins to find itself again, of curtailing our production and with

the consequent disarrangement of the economic life of the country that such a step would entail.

We must lend financial aid to other countries, if only for the purpose of fostering our own industries. There have been those who have taken the position recently that the lending of money to foreign governments or corporations or individuals does not mean that such funds will necessarily be spent in this country for the purpose of purchasing our products, and it has been pointed out in this connection that the developments in Europe for a decade prior to the war are ample proof of the soundness of their views. England and France during that period were by far the heaviest investors in foreign securities. Germany invested relatively a small amount, and yet, during this same period the foreign commerce and trade of Germany increased to a greater extent than that of either of her two rivals.

It is therefore argued that a similar development may very well occur in this country. In other words, that we will lend our capital but receive no advantages in the way of increased foreign trade. It is essential in analyzing this contention that we bear in mind the changed conditions existing at the present time as compared with those existing prior to the war.

We are the only nation that can supply many of the most necessary commodities in anything like the requisite quantity. Foreign governments and corporations, whether they like it or not, will be compelled to make their purchases in this market. It is not a question of choice. It is a matter of absolute necessity. That this situation may change at some

time in the future is quite possible, but in the meantime, present conditions will make it possible for the United States to reap, as it were, the entrepreneur's profits, and the foothold which she obtains, in addition, in the foreign markets of the world she should be able to maintain, at least in part, even under changed conditions.

Apart from the collateral commercial advantages to be derived by this country from a policy of increasing participation in foreign investments, there are certain direct and very important advantages which this country will derive from such a policy.

Advantages of Diversified Investments

It is an old axiom that "it is not well to put all one's eggs in one basket." If this country is able to develop and maintain a great body of private investors, whose holdings are diversified and whose interests reach out over the entire world, our financial structure will be a great deal sounder than it would be if our holdings of securities were purely domestic. While the development of means of communication and of closer commercial relations has brought the various countries of the world more closely together than they were formerly, and while the economic conditions prevailing in any one part of the world are usually reflected throughout the entire world, it is undeniable that periods of local depression and unsettlement of business in one country may exist without having exactly the same conditions in other countries. A diversity of interests on the part of the American investor, therefore, will mean a greater stability

of return and a sounder condition in our investment structure.

Another advantage to be considered is that such diversity of investments is in the nature of an insurance for the nation. One of the reasons Great Britain was able to get on her feet so quickly after the first shock of the outbreak of the World War was that she was able to mobilize her investments in American securities and resell them to us, thus obtaining funds and credit which would not have been available through any other means. At that time her home securities were practically unsalable; her security investments in allied, and of course in hostile countries, were frozen, but she had sufficient quantities of American securities to enable her, through their liquidation, to withstand the initial shock.

That a similar condition may arise in the future in this country is well within the bounds of belief, and for this reason, if for no other, it would seem to be the part of foresight and wisdom, to have in this country at all times a sufficient amount of securities of other countries to enable us, in times of stress, to turn at least a portion of our investment holdings into cash.

Considerations of humanity and of self-interest both, therefore, seem to dictate that the American investor shall in the future take a greater interest in the securities of foreign governments and corporations than he has heretofore. But it remains to be seen how the American investor can be reached and how foreign investments can be made sufficiently attractive, particularly such issues as foreign corporate bonds.

INVESTMENT CONDITIONS IN EUROPEAN MARKETS

In forming any opinion in this matter, it will be helpful to examine the situation prevailing in the older European markets with a view to determining whether the conditions there are likely to be duplicated here.

There are no exact statistics available of the holdings of foreign securities in the three European countries that were financially most important prior to the war, namely, England, France and Germany. From estimates which have been made and from opinions expressed by financiers and scientists in Europe prior to the war, it is evident that the most active market for foreign securities was London. Relatively, however, France had the greatest security interests in foreign countries, that is to say, a relatively larger portion of her natural wealth was invested in foreign securities than in the case of England, while Germany, both relatively and absolutely, had the smallest interest in securities of this class.

France.—An estimate was made in 1903 by the French minister of foreign affairs to the effect that at that time the investments of France in foreign securities and enterprises amounted to thirty billions of francs, and were distributed as follows:

<i>Countries</i>	<i>Billions of Francs</i>
Europe.....	21.0
Asia.....	1.1
Africa.....	3.7
North America, including Mexico.....	1.1
Central America.....	.3
South American and Pacific Ocean.....	2.7
Total.....	29.9

This would mean that around that

time about one-third of the national wealth of France was invested abroad.

At the end of the year 1910 there were approximately 1,300 securities listed in the official part of the French quotation sheet, of which a little more than 40 per cent were foreign issues. Among these foreign issues, more than 60 per cent were those of governments, municipalities, etc., while of the foreign corporate securities, constituting about 35 per cent of all foreign securities listed, the vast majority were railroad bonds.

England.—Similar statistics are not available for the two other principal European financial countries, viz., England and Germany. Consequently the only figures available that will tend to furnish an approximate illustration of the situation are those referring to the securities listed on the respective stock exchanges, although these, of course, by no means comprise all the foreign securities held in these countries. Approximations, however, are sufficient for our specific purposes.

The total foreign securities listed on the London Stock Exchange in 1914 amounted to a somewhat larger proportion than in France, being approximately 47 per cent of all issues listed. However, among the foreign securities themselves the relation was entirely different. Only approximately 28 per cent of these foreign securities were those of governments, municipalities, etc., while the remainder was constituted by corporate securities, about 42 per cent being those of railroads and public utilities, and about 30 per cent of industrial enterprises. The corporate securities were about equally divided between shares and bonds, the bonds being a trifle more numerous. How-

ever, among the industrial securities there were practically no bonds, their total aggregating about 8 per cent of all foreign securities listed in London, while the railroad and public utility bonds constituted about 28 per cent.

Germany.—As is evident from previous remarks, the official quotation sheet of Berlin contained by far fewer foreign securities, viz., about 17 per cent. Among the foreign securities there were about 60 per cent of foreign states, municipalities, etc., about 33 per cent railway bonds, and only about 7 per cent shares, chiefly of railways and a few banks, while there were practically no securities of foreign industrial enterprises other than railways.

From the statistics above mentioned, it is evident that the bulk of the foreign financing which has been done in the three chief European money markets has been accomplished primarily by the placing of foreign government or semi-government issues, railroad bonds and by corporate shares, while foreign corporate bonds, other than railroad bonds, have been used to a comparatively slight degree only. It is also evident that a considerable portion of it was dictated by political considerations. Arguing entirely from these premises, therefore, it would seem as though the opportunity for the introduction of foreign corporate bonds in this market was not as great as that for government issues or speculative shares or bonds.

On the other hand, it must be borne in mind that we are living at the present time under entirely different conditions from those prevailing prior to the war. These changed conditions must be taken into consideration in arriving at a conclusion regarding the

possible course that the introduction of foreign issues in this market will take.

BOND BUYERS IN THE UNITED STATES

We have in this country a comparatively small body of investors in corporate bonds outside of the so-called capitalistic class. The average man in the past has not bought securities. He has deposited his funds in banks and savings banks or has saved through the medium of insurance, if he has saved at all. The result is, that the great mass of corporate bonds held in this country are held by banking institutions, insurance companies and other similar corporations. The appeal must now be made direct to the investor himself. This has been made much easier because of the great amount of educational work that was done in connection with the flotation of the various Liberty Loan issues. A tremendous number of individuals are now owners of United States government bonds who in the past never owned any securities. Very likely because of this we shall find a direct demand on the part of the private investor for corporate bonds such as has not existed heretofore.

Even if this demand should develop, however, it is by no means certain that any material portion of it can be diverted into foreign issues. The rate of return afforded by our domestic corporate bonds is so substantial at the present time that the investor does not feel attracted by the slightly higher yield to be obtained on foreign issues. Other things being equal, he will prefer to have his money invested in securities with the nature of which he is somewhat familiar. Therefore, until domestic corporate bonds yield less

than they do at present or until foreign corporate bonds yield more, it is probably not in strictly investment foreign corporate bonds that the American investor will take his initial plunge into foreign corporate securities. It is to another class of investor (for he is an investor just as surely as the "rentier") namely, the speculator or pioneer that we shall probably have to look.

The Speculative Investor

This type of investor is not interested in increasing his income by one or two per cent. He is willing to risk in order to reap larger profits and, naturally, will not ordinarily buy bonds or fixed income bearing obligations of established industries, at least, not for all of his fortune. For a part, and sometimes for all, he prefers securities that carry the possibility of considerable enhancement in capital value. The economic progress in new parts or long neglected parts of the world, has been due to this type of investor. Without him the phenomenal development of our own middle west and far west within less than one lifetime, would have been utterly impossible. The same is true of the progress that has been made, for instance, in some parts of South America during the last two decades, and the same will be true in the case of the tremendous territories now dormant, in the sense of modern economic life, such as China, Siberia and others.

The history of foreign investment markets bears ample testimony to the fact that it was the same class of investor who first took an interest in foreign corporate securities. It has

generally been true that the original issues of other than home securities in any financial market, outside of government or quasi-government obligations, such as appeal to the "rentier," have been of such a nature that they carried with them an opportunity for considerable profit rather than a fixed return. Subsequently, as a given proposition or a given country became better known and more developed, it was possible to place bonds or fixed income bearing obligations with the small investor, but usually this was only after the pioneer had blazed the trail.

FACTORS FAVORING FOREIGN CORPORATE BONDS

Exchange Rates.—The situation likely to govern the introduction of foreign corporate bonds in this country in the near future is, however, entirely different to the conditions which have prevailed in the past in the older countries abroad. We are living in this country in a period that is unique in the history of the world, in that we have never before witnessed such a relatively high value of the dollar as exists today, that is to say, such a depreciation in the moneys of other countries. The pound sterling is selling at approximately 30 per cent discount, the franc at about 65 per cent discount, the lire at about 72 per cent discount and the mark at about 95 per cent discount, while Austrian kronen are selling at even greater depreciation. Because of this situation it becomes possible for the American investor to purchase the fixed interest bearing obligations of foreign countries or of well established enterprises located in well developed coun-

tries at a price in American dollars which should in the long run show a considerable profit upon his original purchase.

The American investor who today, for example, purchases the soundest corporate bonds of English enterprises, the interest on which has been paid for many years, will have an additional profit of approximately 45 per cent on his investment when exchange again becomes normal. The investor in securities in other countries would, as has been shown, have an even larger profit by virtue of a return of exchange rates to normal.

It would seem, therefore, as though the opportunity were ripe for the introduction in this country of foreign corporate bonds at the present time, with an almost absolute assurance that they would appeal to the American investor, provided he were thoroughly informed of the nature of the security and the possibilities of such investments. This is particularly true because, as has been pointed out, the depreciation in exchange is such that the purchase of investment issues abroad will appeal to that type of investor who wishes to make more than a fixed return upon his money.

Interest Rates.—One of the things which has hitherto retarded the introduction of this type of security in the American market has been the fact that it has been possible for European industries to borrow money more cheaply in their own markets than they could in this country. It has been true, in most of the countries of Europe, even during the war, that interest rates were lower than they were here. There was, therefore, no incentive for the foreign corporations

to come to the American money market, nor was there any incentive for the American investor to place his money abroad, owing to the fact that he was able to obtain securities with which he was familiar that returned a better yield on his money. Up until recently, the various foreign exchanges had not depreciated to such a considerable extent, and therefore this element of attraction, also, was lacking.

This situation is, however, in process of change. The depreciation in foreign exchange above referred to, and the desirability of obtaining credits in the United States for the purchase of commodities has made it exceedingly desirable for foreign corporations to do at least a portion of their borrowing in the American market. For such borrowings, the present condition of the exchange market makes it possible for them to pay a considerably higher rate of interest than they could under normal conditions, and a considerably higher rate of interest than American corporations could afford to pay for similar loans. There is, therefore, every prospect that for this reason, if for no other, foreign corporations will compete with domestic concerns for capital in the American money markets.

European Interest Rates.—Moreover, since the end of the war there has been an upward movement in interest rates throughout Europe so that the level there at the present time is approximately that prevailing in this country or higher. Owing to the tremendous demand for capital and credit arising from the process of rehabilitation and reconstruction, it is practically a foregone conclusion that interest rates in the European money markets will advance still further. It will then

become profitable for foreign industries, other than those requiring dollar credits, to turn to the American money market. It will then become necessary for them also to compete with our domestic issues, and this should bring about an increase in the interest return to the American investor which is certain to arouse his interest. When this situation is considered in conjunction with the possibilities arising from the depreciated condition of foreign exchange, it would seem as though we had arrived at a place where we were about ready to consider actively the possibility of introducing foreign corporate issues here.

PUBLIC INTEREST IN FOREIGN SITUATIONS .

In order to obtain the best possible results, it will be necessary that the American investor be fully informed of the nature of the security which is offered him, of the conditions prevailing in the countries containing the industries whose securities are being offered, and, in general, that he should become familiar with the exact status of his proposed investment.

For this, it will be necessary to have the newspapers and other publications of this country give a great deal more space and attention to foreign conditions than they have heretofore. One of the results of the Great War has been to arouse the interest of the American people in the doings of other lands and to increase their fund of information regarding various foreign governments and the conditions prevailing in other countries. This state of mind of the American people, if it is fostered by responsible publications, should lead to a more exact knowledge

of conditions in foreign countries, and, therefore, to a greater interest in the securities originating there, and this should be one of the elements which will make possible an increasing participation by American investors in foreign securities.

THE SMALL INVESTOR AND FOREIGN SECURITIES

There is another development which has come about recently which should tend to bring about an increased participation of American capital in international finance. Even granted that the average American investor is fully informed of the relative merits of foreign securities, it still remains true that the investor of moderate means has not a sufficient amount of capital at his disposal to diversify properly his risks. It may very well happen that one or two of a stated number of foreign investments turn out to be worthless. On the other hand, if an individual's holdings are sufficiently diversified he will still be in a position to reap substantial profit on his total holdings, by virtue of the fact that the remainder return him an unusual profit. Some means should, therefore, be devised to enable the small investor to diversify his holdings. A beginning has already been made here in the formation of investment companies, the purpose of which is to purchase foreign securities, something along the lines of the Scottish investment trusts. The Scottish investment trusts usually issued their own obligations to their investors and with the proceeds thereof purchased the obligations of foreign governments and foreign industries, so diversifying their holdings that the risks were comparatively slight and the

possibilities for profit considerable. Several similar companies have been formed recently or are in process of formation, and the prospects are that a great many more will ultimately be brought into being, thus providing the somewhat indirect but very important method of enabling the small investor to participate in foreign investments on a rather safe basis, namely, by securing a diversification of interests and selection based upon expert knowledge.

From the evidence that has been adduced, it would seem as though the time were at hand when the American investor can and will purchase foreign corporate securities. The stage is

set. That there are still many obstacles to be overcome is undeniable; that a vast amount of educational work must be done is evident. The process of orientation in the light of changed conditions will of necessity be gradual, but we will find ourselves ultimately. To this end we will require the utmost coöperation by all far-seeing elements of the country. Nationalism and internationalism in finance are not two opposed and hostile ideas; they go hand in hand; and this is the doctrine that must be preached and accepted if America is to seize and hold her rightful heritage—the material and moral leadership in world affairs.

Canadian Bonds

By G. A. MACPHERSON

Member of A. E. Ames and Company, Toronto, Ontario

COMMON INVESTMENT INTEREST BETWEEN CANADA AND THE UNITED STATES

FOR a long period of years purchasers of securities (both speculative and investment) in North America have been buying government, municipal and corporation securities without much regard to international boundaries. In practically every crossroads town in Canada, you will find owners of securities of some of the following: United States Steel Corporation, Great Northern Railway Company, Northern Pacific Railway Company, New York Central Railroad Company, Pennsylvania Railroad Company, Erie Railroad Company, Twin City Rapid Transit Company, and other well known Corporations.

Neither is it an uncommon thing to find United States investors who are owners of securities of some of the following: Canadian Pacific Railway Company, Canadian Northern Railway System, Grand Trunk Railway Company of Canada, Dominion of Canada, the various Provinces and all the larger Canadian Cities, as well as a large number of corporations such as, Shawinigan Water & Power Company, Montreal Light, Heat & Power Consolidated, Montreal Tramways Company, Nova Scotia Steel & Coal Company Limited, etc. These holdings indicate that there is a common investment interest between people in Canada and the United States.

REASONS FOR INTER-RELATION OF SECURITY HOLDINGS

The ordinary observer may assign sentiment as the main reason for this inter-relation of security holdings, but sentiment alone would be, in our estimation, a frail foundation for any permanent progress in this connection. We believe that the reasons for this common interest are sentiment, trade relations and satisfactory security values.

Sentiment

It would be a rash man who, today, would undertake, in either Toronto or New York, to separate by casual observance United States citizens from Canadian citizens. We nearly all speak the same language, wear the same kind of clothing, eat the same style of food and use the same customs and manners, as a large percentage of both countries are of Anglo-Saxon ancestry. Practically every Canadian summer resort is well patronized by United States citizens, and Canadians by the thousands spend several winter months in California and the Southern Atlantic States.

We may even say that we think alike, the most conclusive evidence of this being the fact that in 1915 we commemorated the one hundredth anniversary of peace between the United States and Canada, countries which adjoin for approximately four thousand miles without a single border fort.

During the time that the Canadian Army, for overseas service in the Great War just finished, was recruited under the volunteer system, there were so many volunteers from various sections of the United States that it was found advisable to form a separate unit, which was called the "American Legion." These relations were more firmly

growth of this trade is shown in the following table.

The foreign trade of Canada in 1918, with a population of seven and one-half millions, exceeded by over \$100,000,000 the foreign trade of the United States in 1904 with a population of over seventy-five millions. The trade of Canada with the United States in 1918

Year	Canadian Total Trade	Exports to U. S.	Imports from U. S.	Total Trade with U. S.
1870.....	144,811,000	37,228,000	21,697,000	58,925,000
1880.....	159,693,000	29,566,000	28,193,000	62,696,000
1890.....	209,514,000	36,213,000	51,865,000	92,814,000
1900.....	372,699,000	59,666,000	102,080,000	178,463,000
1905.....	465,242,000	70,426,000	152,431,000	240,142,000
1910.....	677,191,000	104,199,000	217,502,000	336,652,000
1911.....	759,147,000	104,115,000	274,844,000	404,331,000
1912.....	862,799,000	102,041,000	330,428,000	476,889,000
1913.....	1,068,749,000	139,725,000	435,770,000	608,252,000
1914.....	1,112,690,000	163,373,000	395,565,000	611,245,000
1915.....	1,078,248,000	178,320,000	296,632,000	644,026,000
1916.....	1,424,949,000	201,106,000	370,496,000	718,918,000
1917.....	2,249,195,000	280,616,000	664,219,000	1,164,502,000
1918.....	2,564,484,000	417,233,000	791,906,000	1,247,501,000
1919.....				

cemented by the entrance of the United States into the Great War on the side of the Allies.

Trade Relations

With such pleasant relations existing between the United States and Canada, one would expect to find a great interchange of trade. This is, indeed, the exact situation and the

exceeded by over \$90,000,000 the foreign trade of the United States in 1879 with a population of over fifty millions. Canadian purchases in the United States in 1918 exceed by over \$87,000,000 the foreign trade of the United States in 1869 with a population of over thirty-eight millions. Over half of Canada's trade is with the United States.

Year	Sold in Canada	Sold in the United Kingdom	Sold in the U. S.	Total
1905.....	\$35,149,000	\$85,621,000	\$9,256,000	\$134,874,000
1906.....	23,304,000	26,563,000	4,118,000	53,987,000
1907.....	14,761,000	63,095,000	4,779,000	82,635,000
1908.....	24,585,000	165,455,000	6,316,000	196,356,000
1909.....	60,433,000	194,856,000	10,367,000	265,158,000
1910.....	39,296,000	188,070,000	3,634,000	231,000,000
1911.....	44,989,000	204,269,000	17,553,000	266,812,000
1912.....	37,735,000	204,236,000	30,966,000	272,937,000
1913.....	45,603,000	277,470,000	50,720,000	373,795,000
1914.....	32,999,000	185,990,000	53,944,000	272,935,000
1915.....	114,275,000	41,175,000	178,606,000	335,106,000
1916.....	102,938,000	5,000,000	206,943,000	356,882,000
1917.....	546,330,000	5,000,000	174,708,000	726,039,000
1918.....	727,446,000	14,600,000	33,310,000	775,356,000
1919.....	716,000,000		150,000,000	876,000,000

(1 month estimated)

Satisfactory Security Values

The experience of United States investors who have been purchasers of Canadian government, provincial and corporation bonds, has been very favorable, in fact, much more favorable than their experience with their own securities. As a result, the volume of Canadian bonds sold in the United States, as shown in the preceding table, has considerably increased over a period of years.

With all the effort that is being made to educate the United States investor to buy foreign bonds for the purpose of extending credit to foreign nations, you very seldom see included in the list of these foreign nations, the name of Canada. It has become a settled conviction with the financial houses of the United States that any reasonable amount of money required by the government of the

Dominion of Canada, or any of her provinces or large cities, or any of her satisfactory corporations, can be readily secured in the United States, providing the issues are framed to suit market conditions.

CANADIAN FINANCE DURING THE WAR

As a result of the well organized war effort of the Canadian people, the Canadian Army made a record of which Canadians may well be proud, and Canadian industry adjusted itself to war conditions so readily that a very enviable record for quality, speed and certainty of supply was made in the manufacture of munitions. Great as were these two achievements, Canada's best record was made in finance, as previous to the war approximately 87 per cent of all Canadian bonds were sold outside of Canada and only 13 per cent marketed at home, while it is

INVENTORY OF THE NATIONAL WEALTH OF CANADA

Items	Estimated Present Value
Agriculture—Improved lands.	\$2,792,229,000
Buildings.	927,548,000
Implements.	387,079,000
Live Stock.	1,102,261,000
Fishing—Total capital invested.	47,143,125
Mines—Value of buildings and plant.	140,000,000
Manufactures—Plant and working capital.	2,000,000,000
Railways.	2,000,000,000
Street Railways.	160,000,000
Canals.	123,000,000
Shipping.	35,000,000
Telegraphs.	10,000,000
Telephones.	95,000,000
Real Estate and buildings in cities and towns (based on assessments of 140 localities)	3,500,000,000
Clothing, furniture and personal effects.	800,000,000
Coin and bullion—held by Receiver General.	119,000,000
Specie in banks.	82,000,000
Value of token currency.	7,500,000
Imported merchandise in store.	250,000,000
Current production—Agriculture.	1,621,028,000
Fishing.	39,000,000
Forestry.	175,000,000
Mining.	190,000,000
Manufacturing.	2,400,000,000
Total.	<u>\$19,002,788,125</u>

estimated that in the year following the war (1919) 83 per cent were purchased by Canadian investors.

In addition to the purchase of the new issues, a great volume of the issues which had been sold originally in the English market, has been repurchased and redistributed in Canada; so that

Some of the best known and most traded in Canadian issues are as follows:

Dominions

5's due April,	1921
5's due April,	1926
5's due April,	1931
5½'s due August,	1921
5½'s due August,	1929
5's due March,	1937

PROVINCIAL STATISTICS

Province	Population	Area Square Miles	Total Funded Debt	Debt per Capita	Net Debt	Net Debt per Capita	Revenue	Expenditure
Alberta.....	529,000	255,285	\$31,500,200	\$59.54	\$16,246,149	\$30.71	\$9,527,424	\$8,303,806
British Columbia..	392,480	355,855	27,751,936	70.25	23,362,652	59.53	8,882,846	8,073,565
Manitoba.....	613,000	251,832	35,870,370	58.51	14,623,802	23.86	7,631,598	7,308,680
New Brunswick...	351,889	27,985	18,163,089	51.62	11,167,929	31.74	3,092,211	3,665,283
Nova Scotia.....	492,338	21,428	13,362,706	27.14	12,874,426	26.15	2,304,076	2,849,842
Ontario.....	2,523,274	407,262	75,645,917	29.98	74,554,055	29.55	19,270,123	17,460,404
Pr. Edward Island.	93,728	2,184	818,000	8.72	673,767	7.18	501,293	523,617
Quebec.....	2,330,042	703,653	39,827,769	16.73	38,015,654	15.97	13,806,390	11,423,497
Saskatchewan.....	733,660	251,700	29,990,906	40.88	16,831,291	22.94	8,278,465	6,884,534

considering the present purchasing power of the Canadian investor, the extension of Canada's foreign trade and her all round development, it would not be surprising if, during the next ten years, she should become a creditor instead of a debtor nation.

MARKET FOR CANADIAN SECURITIES
IN THE UNITED STATES

In connection with the marketing of Canadian securities in the United States, practically every United States Bond House of any importance has, at one time or another, been interested in Canadian issues. During the last ten years the Dominion government and every province, with the exception of Prince Edward Island, and practically every large Canadian city has made at least two issues, and some many more, in the United States.

and various internal issues payable in Canada only.

Province of Alberta

5's due August,	1922
4½'s due December,	1923
5's due February,	1924
5's due May,	1925
5's due May,	1926
6's due August,	1928

Province of British Columbia

4½'s due December,	1925
4½'s due July,	1926
5's due July,	1939

Province of Manitoba

5's due February,	1920
5's due October,	1920
5's due April,	1922
6's due February,	1928

Province of New Brunswick

5½'s due May,	1922
4½'s due December,	1925
6's due February,	1928
5½'s due December,	1929

Province of Nova Scotia

5's due January,	1926
------------------	------

Province of Ontario

5's due February,	1920
5's due May,	1922
5½'s due April,	1922
5's due January,	1922
5½'s due August,	1924
4½'s due May,	1925
4's due March,	1926
6's due February,	1928
5½'s due December,	1929
5½'s due September,	1929

Province of Quebec

5's due April,	1920
5's due June,	1926

Province of Saskatchewan

5's due October,	1925
4's due July,	1923
5's due December,	1920-1925
4½'s due July,	1926
5's due May,	1926
6's due July,	1938
5's due April,	1939

Municipal

Toronto—4's, 4½'s, 5's and 5½'s, various maturities

Montreal—6's due May, 1923

5's due May, 1936

5's due November, 1956

Winnipeg—5's due October, 1926

Ottawa—5's various maturities

Greater Winnipeg Water District

5's due April,	1920
5's due July,	1921
5's due July,	1922
5's due February,	1923
6's due August,	1923
6's due January,	1924

Corporations

Canadian Pacific Railway notes, 6's due March, 1924

Canadian Pacific Railway Equipment, 4½'s due January, 1920, 1928

Grand Trunk Railway Equipments,
Canadian National Railway Equipments,
Montreal Light Heat & Power, 4½'s due January, 1932

Shawinigan Water & Power, 5's due January, 1934

Cedar Rapids Manufacturing & Power Company, 5's due January, 1953

Laurentide Power Company, 5's due January, 1946

Toronto Power Company, 5's due July, 1924
Electrical Development, 5's due March, 1933

Montreal Tramway, 5's due July, 1941

Dominion Power & Transmission, 5's due April, 1920, 1932

Dominion Glass Company, 6's due June, 1933

Bell Telephone of Canada, 5's due April, 1925

The concrete evidence of a growing interest in Canadian securities in the United States is shown in the establishing, in Canada, of branches of three of the largest United States bond houses. With the number of issues regularly traded in becoming greater year by year, and more United States bond houses establishing branches in Canada as well as Canadian firms establishing branches in the United States, we believe that prime Canadian securities will in a few years be one of the most popular forms of investment in the United States.

Latin American Securities

By WILLIAM S. KIES

Formerly Vice-President of The National City Bank of New York and of the American International Corporation, now of Aldred and Company

FOREIGN MARKETS AND INVESTMENT

DURING the last five years we have heard much about the necessity of developing a market in the United States for foreign securities. Just before the war the country had awakened to the fact that the capacity of our manufacturing plants was in excess of our domestic demands, and that in order to insure the industrial prosperity of the United States it was necessary to develop foreign markets. Those who gave study to the subject saw immediately that permanent markets must be built upon the foundation of foreign investments; that the reason why England and Germany controlled the larger part of the South American trade lay in the fact that these countries had invested something over four billions of dollars in the securities of the South American Republics, and that the enterprises controlled through these investments became permanent users of English and German supplies. Usually, too, the government loans made contained a provision that the proceeds of the loan were to be expended in the country making the investment.

The passage of the Federal Reserve Act in 1913 opened the way for branches of American banks abroad, and through these agencies and the development of organizations like the American International Corporation, the instrumentalities were created for the investigation of foreign investment business.

FOREIGN INVESTMENT BANKING

The World War threw out of gear the mechanism of international exchange. It shut off from South American countries their financial markets, and made it impossible for them to obtain any further credit in Europe. Foreign investment banking was a new field for the American banker. It required investigation and study, and, more than that, successfully to handle foreign investments, required a market in the United States. The American investor, in the past, has had plenty of opportunities for investment in his own country, and, as a matter of fact, we ourselves drew upon Europe for the development of our own resources. The only considerable amount of American money invested in a foreign country was that which was placed in Mexico, and the unfortunate experience of our investors in that country has resulted in a lack of enthusiasm among our investors for foreign securities in general, especially in countries concerning which our knowledge is limited.

Sound banking practice demands that the resources of our national and state banks should be liquid. This precludes our banks making long term loans to foreign countries. If we are to make these foreign investments, they must be distributed among the investors of this country, and this necessitates a campaign of education. The process of educating our investors to the importance of making foreign

investments is a difficult one, and while much work has been done along this line in the last few years, the great task is still before us if real results are to be accomplished.

INVESTMENT OF THE UNITED STATES IN SOUTH AMERICAN SECURITIES

I have been asked to write specifically of South American securities. The layman may have an idea that a great deal has been accomplished in the making of a market for South American securities, due, probably, to his having read so much on the subject and to having heard the matter discussed at commercial association and trade meetings. As a matter of fact, very little progress has, up to the present, been made, if progress be measured by the amount of securities placed.

In the early days of the war (May, 1915) the Argentine floated \$25,000,000 of three-year notes. This was followed later by a short term acceptance credit. The City of Sao Paulo, in Brazil, made a loan in this market in 1915, which has recently been funded into a larger loan of \$8,500,000. The City of Rio de Janeiro, in May of this year, arranged for a \$10,000,000 serial loan (1922-1930) the proceeds of which are to be used for funding existing indebtedness of the municipality, and for public improvements. In 1915 Uruguay made an arrangement with the Ulen Contracting Company and the American International Corporation for a loan of approximately \$5,000,000 to cover a contract for sanitary and water works in a number of Uruguayan cities. Owing to the peculiar exchange situation, resulting in the dollar being at a very substantial discount, this loan, instead

of being marketed in this country, was sold back to Uruguay, several years later. This transaction demonstrates not only the business shrewdness of the Uruguayan but the substantial resources of the country, which absorbed by an internal loan the amount of the external loan, with a very substantial profit to the government of Uruguay. With the exception of a loan to Bolivia and one or two short term credit operations with bankers, this represents all that the United States has done in South American countries in the way of investments since 1914. The sum total will not exceed \$50,000,000.

RESOURCES OF SOUTH AMERICA

South America has, however, not stood still during the last four years. While it was unable to borrow anything in Europe and practically nothing in the United States, nevertheless, all of these countries have prospered exceedingly during the war, and each has had a great increase in its favorable trade balance. *Peru's* trade balance in 1913 was \$15,000,000; 1916, \$38,000,000; 1917, \$25,000,000. *Peru's* resources are varied and its raw materials were in great need. Her exports increased from \$44,000,000 in 1913 to \$91,000,000 in 1917. The sugar and cotton industries received a great impetus, and *Peru's* planters have become very wealthy. *Peru* actually reduced its debt during the war, and handled its finances in an excellent manner. Not only did *Peru* export large quantities of cotton and sugar, but hides, wool, rubber and copper also showed substantial increases.

Bolivia increased her exports from \$36,000,000 in 1913 to \$70,000,000 in

1918, with a favorable trade balance in 1918 of \$39,000,000. Bolivia has the greatest tin mines in the world, but before the war Bolivian tin had difficulty in competing with the tin of the Straits Settlements, because the Bolivian tin was more difficult to smelt. Tungsten, copper and silver all showed an enormous increase in production.

Both Peru and Bolivia have unlimited mineral resources, but, in the great majority of cases, the mines are worked by primitive methods. What can be accomplished on a large scale by modern methods is shown by the success of the Cerro de Pasco, Braden and Chile Copper Companies. These are all American developments. The entire mining industry of these countries is ready for modern methods, and for the substitution of machinery for labor. The almost prohibitive expense of coal makes necessary the use of wood and of unsatisfactory fuel substitutes, such as mountain moss and animal dung. Electric power in sufficient quantities to run the mines of Bolivia is a practical possibility of the future, and affords a real opportunity for American investment.

Chile was enormously prosperous during the war by reason of the unlimited demands for her nitrates. Chile's trade balance in 1913 was \$25,000,000, and in 1917 was \$130,000,000. The Argentine and Uruguay found ample opportunity to dispose of their cattle, hides, wool, wheat, corn and other agricultural products. For the first time in their history butter and cheese in substantial quantities were exported. The Argentine's trade balance was \$22,000,000 in 1913 and \$333,000,000 in 1918. In 1913 Uruguay's trade

balance was \$15,000,000 and \$33,000,000 in 1917.

In Brazil great impetus was given to the cotton industry. There are over three million spindles today, a large portion of them having been put in during the war. Brazil was able to furnish the Allies coffee, cocoa, rice, mandioca, raw cotton, manufactured cotton, hides, dressed cattle and manganeese. Brazil's trade balance increased from an unfavorable balance of \$10,000,000 in 1913 to a favorable balance of \$40,000,000 in 1918.

All of the South American countries have increased their national wealth materially during the war, and, as a consequence, the basis of any security which may be issued by them has become much more valuable. On the other hand, with one or two exceptions, the financial condition of the governments themselves has not improved. A number of the South American governments, including Brazil and the Argentine, had plans under way with European bankers for reorganization of their finances when the war put an end to any further discussions. They have been able to do nothing since. These countries naturally look to the United States for assistance and help.

INVESTMENT OPPORTUNITIES IN SOUTH AMERICA

Peru desires to reorganize her finances and to float loans in this country for the purpose of providing water works and sewers in her large cities, and for the construction of roads and railroads. The great addition to her national wealth, the reduction of her debt, and the great possibilities for future development form the basis of a security which, before the war, would

have occasioned a European banker no hesitancy whatever in the loaning of money. It remains to be seen whether the American investor will take a similar view of it.

Bolivia also needs money for the sanitation of her cities and the building of one or two railroads strategically well planned from an economic viewpoint. Chile needs to reconstruct and rehabilitate her entire system of state railroads. These roads need new rails, new road beds in places, new bridges, a signal system, new engines, and a vast amount of rolling stock, and, to accommodate the dense traffic between Santiago and Valparaiso, this section of the road should be electrified. The development of a number of ports and harbors has been held up by the war, and Chile is anxious to proceed if she can obtain the money. The route over the Andes is blocked by snow a large part of the year, and traffic is at a standstill. The expenditure of substantial sums in the building of snow sheds and other protective devices against the avalanches will make the Transandine Railroad usable throughout the entire year.

The Argentine is enormously rich. Its possibilities are unlimited, but the government has a large floating debt, and its finances need careful thought and study in the working out of a comprehensive funding plan which shall take care not only of present needs but which will also furnish the money for drainage works, government elevators, so necessary to do away with the huge yearly loss through damage to unprotected grains, extension of port works, and further railroad development.

Uruguay wants money to install

sewers and modern water works systems in all of the larger cities, to carry out further harbor developments, and to build roads and bridges.

Paraguay needs to work out a comprehensive financial plan. Her currency must be put upon a stable basis. The country has prospered immensely as a result of the war. The national wealth has grown but the government's debt has increased, and the financial problem is a real one.

Brazil, at the outbreak of the war, had arranged with the Rothschilds for a comprehensive refunding operation. The war caused a breaking off of negotiations. The enormous natural resources of Brazil, and the great possibilities of the future, should furnish a stable security for substantial loans which will put Brazil's governmental finances in good condition. The problem is one for expert and experienced financiers. The help of the American banker would be welcome, but the American banker hesitates because of the large volume of securities which would have to be issued, and the difficulty of making a market for them in the United States.

Measured by its potential wealth, Brazil is one of the richest countries in the world. It has reached a high stage of development in those parts of the country made accessible by transportation facilities, but the vast interior of Brazil is an empire in itself, with unlimited possibilities. The interior of Brazil is comparable to the far west of the United States seventy-five years ago. Brazil has every variety of climate, and can grow practically anything. The prairies and plains of the interior afford a grazing ground which should some day make her

the greatest cattle country in the world.

To develop these vast resources, Brazil needs labor, money and brains. The labor will come. Already the tide of immigration from Europe has set in. The money is needed to build roads and railroads, to develop the vast areas for colonization, and to develop water power and the other latent resources of the country. Much of this work must be undertaken with governmental or state guarantee and aid. The amount of money Brazil could use is almost unlimited, and every dollar invested and properly put to work in Brazil will show extraordinary profit.

AMOUNT OF LOAN REQUIRED BY SOUTH AMERICA

A reasonable estimate of the actual loan requirements immediately desired by the six governments mentioned would involve the issuance of at least five hundred million dollars worth of securities. In all cases there is ample security, not only in the actual wealth and potential resources of the countries, but a comprehensive reorganization of the fiscal and taxing systems of these countries would result also in a wide margin of security over interest and amortization requirements. In addition to the five hundred million dollars mentioned, at least twice as much more could be used to advantage by states and municipalities, and in the development of the resources of these countries through private instrumentalities.

A part of the money needed would be for the purpose of refunding old loans, but a large proportion of these funds would be immediately used for public improvements in the shape of

roads, sanitary works, water works, railroads, and port and harbor works, all of which would mean employment for American engineers and a market for construction materials, machinery, railroad equipment and miscellaneous supplies of all kinds.

In any investment there is involved a moral hazard, and this is probably one of the most important considerations in a campaign to persuade the American investor to lend his money abroad. There still exists among the investors in this country a great deal of ignorance concerning South America. There seems to be little realization of the immense resources of these countries and of their progress in the past decade. After an extended visit to the six countries mentioned, and a careful study of social, economic and political conditions, the conclusions reached are generally favorable.

SOUTH AMERICAN CREDIT IN AMERICA

The South American appreciates the necessity of establishing the credit of his government in the United States. He has a serious understanding of the necessity of maintaining inviolate international obligations. While the disarrangement of the financial machinery of the world made it necessary, in some instances, for South American governments to ask for extensions of time on maturing obligations, yet all of these situations have been satisfactorily worked out. There has been no scaling down of foreign obligations in so far as any of these governments are concerned, and in each case the service upon the external debt is considered as the first charge upon the revenues of the country, even though a particular debt may not be specifically guaranteed.

An instance of the jealous care with which a South American country guards its credit is shown by the fact that during the Balmaceda revolution in Chile both factions provided the funds with which to meet the principal and interest on the national debt, which came due during the Civil War in which the country was engaged.

There is a feeling of sensitiveness in the larger countries of South America over the demands of North American bankers for special security. It is argued, with a great deal of justice perhaps, that great nations like the Argentine, Chile or Brazil should not be obliged to specifically mortgage customs and taxes in order to raise loans; that the stability of these countries and their resources are such that their credit ought not to be questioned. In the years immediately preceding the great war, all of these countries floated loans in Europe at low rates of interest, without any special guarantees, and this fact is brought out in discussions with government officials by way of contrast to the general attitude of American bankers.

But it is interesting to note in this connection that Argentina in planning to open a credit, through the Bank of the Argentine Nation, for England, France and Italy jointly of \$200,000,000 is asking that such a loan be specially secured by the deposit of either equivalent amounts of foreign held Argentine securities or a large percentage of gold.

MARKET FOR SOUTH AMERICAN SECURITIES IN THE UNITED STATES

It is difficult to explain market conditions in this country. Our South American friends can hardly

appreciate the fact that the North American investor knows little about South America. They put us in the same class with the great European nations before the war and wonder why we are not willing to do the same thing they did. They point to our immense wealth and resources, and can not understand why it is not possible to obtain the needed money in the United States on terms similar to those granted by European countries before the war. All South America realizes that for years to come the United States is the only remaining reservoir of capital which is available to it. The South American can not understand why we are not willing to lend money, as Europe did, at 5 per cent. This is because he has no knowledge of the condition of our market. His unwillingness to meet the interest rates in our market will probably disappear when he in turn studies our own conditions and knows more about this country, and when the needs for new financing become more acute.

There are many forward-looking financiers in South America, who recognize the fact that if their countries are to develop their resources, they must obtain the confidence of the American investment market, and to this end are willing to make sacrifices of pride and money, by paying high interest rates, in order to establish the credit of their countries here. Most of the governments are prepared to be very liberal with the private investor, and are ready to offer inducements to tempt capital to develop their lands, promote new industries, and to supplant old methods by modern methods and machinery.

SOUTH AMERICAN ISSUES IN EUROPEAN
MARKETS

For the benefit of the student of South American investments, who desires to study the record of South American issues in European markets, there is presented in an exhibit following this paper a table showing the yield as based on the latest prices on the London market, and the high and low prices over a period of years, on a list of typical South American securities.

It will be noticed that the decline in the values of South American issues has been in line with the increasing rates for money, and the general depression of the security markets of the world. Before the war the Argentine, Brazil, Chile and Uruguay $4\frac{1}{2}$ per cent and 5 per cent bonds sold at a substantial premium above par. These same bonds, during the war period, showed a discount in some cases of 25 per cent below par. In August of this year these particular issues came back to within from five to eight points of par in the case of the 5 per cent bonds, and a price of $85\frac{1}{2}$ in the case of the Argentine sterling bonds. The price of 95 for Uruguay's 5 per cent loan would seem to indicate the judgment of the London market on Uruguayan credit to be favorable. An examination of the table shows, on the other hand, that the credit of some of the states and municipalities is not as favorably regarded.

The railroads of South America have been experiencing high costs of operation, and in the Argentine have been suffering from government restrictions in the matter of rates. That government restrictions interfere with credit is shown by the course of the values of the railroad securities set out

in the table. An interesting fact about this table of South American securities is that it compares very favorably with a similar table of North American securities which might be prepared. The prices have shrunk during the war, as the effects of the war have made themselves felt in the shutting off of capital and in the enormous increase in expense of operations of all kinds.

THE AMERICAN MARKET FOR FOREIGN
SECURITIES

The problem of making a market for foreign securities in this country is one which we must solve, as it directly affects the future prosperity of our people. A study of the trade balances of the United States during the war period, and a glance at the figures for the current year, shows that the world is our debtor for many billions of dollars. This existing debt can only be paid by gold, by goods, or by postponing the date of payment, through the granting of credits, which means by investment, on the part of our people, in foreign securities.

Furthermore, our position as an international trader in the future has been radically altered by the turning back on our market, during the war, of American securities held in Europe and by our new policy of owning and operating our own merchant marine. In pre-war years there was a continual balance of trade of exports over imports in our favor, which was settled by our paying huge sums as interest and dividends to foreign holders of our securities and for freights and passage on foreign vessels. Since the war, the situation is exactly the reverse and there will be even larger payments to

be made to the United States in the future for interest due us and for the use of our ships. The trade situation will consequently be reversed and we will have to import in far greater amounts than we export. We will have to see our much vaunted export trade dwindle, and our people consuming more goods of foreign manufacture, unless the alternative policy is seized upon by the rank and file of our people. That alternative is to make yearly large investments in foreign securities. Such investments by us and our present desirable export trade are inseparably related. The laws of international trade balancing are unalterable. The total value of our exports, plus the value of such services as shipping and insurance must be balanced by an equal value of imports, or the surplus of exports and services must be offset by a corresponding investment of capital abroad. Unbalanced working of this principle means injurious exchange conditions and if continued forces a reduction of exports and services and an increase of imports to the point of balance.

South America offers a particularly attractive field for profitable investments in constructive development enterprises. The world can not stand still and, for the benefit of mankind, the great undeveloped resources of South America must be organized and placed at the disposal of the consuming world. The application of capital to the resources of South America will mean an increased production of those things which the world most needs, because South America is primarily a producer of the raw materials which are so necessary to feed and clothe men.

Labor in South America is cheap and plentiful, the soil extremely productive, and the problems of production comparatively simple. A greatly increased production in South America will not only stimulate and develop trade between the United States and South America and make a market for the products of our factories, but will also contribute materially toward the reduction of the high cost of living the world over.

AMOUNT OUTSTANDING OF SOUTH AMERICAN SECURITIES LISTED ON THE LONDON MARKET JUNE 1919

FIGURES IN MILLIONS OF POUNDS STERLING¹

Governmental	State	Municipal	Public Utilities Light and Power, Trams, Water Works, Dock	Railways	All Other Companies	Total
218	25	19	47	285	124	718

¹ Source: *Investors' Monthly Manual*.

TYPICAL SOUTH AMERICAN BONDS—

	Amount Quoted (Value or No.)	Re- demp- tion Date	Yield on Latest Price, Per Cent	1911	
				H	L
GOVERNMENTAL					
Argentina					
4½% Sterling Bonds.....	£3,120,600	1932	5.49	102	97½
Brazil					
5% Loan of 1903.....	£7,698,100	1940	5.86	104½	100½
Chile					
5% of 1909.....	£2,815,500	1960	6.25	103½	98½
Peru					
5½% Salt Loan.....	£1,036,880	1938	6.34	..	..
Uruguay					
5% of 1896.....	£934,400		5.30	102½	99
STATE					
Province of Buenos Aires					
3½% Sterling Bonds.....	£10,004,680	1920	7.01	74½	69½
Sao Paulo					
5% of 1904.....	£744,580	1936	5.32	102½	98½
MUNICIPAL					
Buenos Aires					
5% Loan of 1909.....	£1,435,660	1946	6.46	103½	100½
Lima					
5% 1st mortgage bonds.....	£595,700		6.60	..	..
Montevideo					
5% as designated 6%.....	£980,718		6.25	103	97½
Rio de Janeiro					
Federal District 5% of 1905.....	£3,731,620	1955	6.45	103	96½
Sao Paulo					
6% Gold Loan.....	£662,640	1943	6.00	108½	103½
Valparaiso					
5½% Water Bond.....	£226,300	1940	6.05	..	..
QUASI PUBLIC					
(a) Railways					
Argentina					
Central Argentine 4% debenture stock	£13,452,232	1988	6.65	103	99½
Central Argentine 4½% Preferred Stock.....	£9,695,718		7.37	..	..
Buenos Aires Great Southern 4% de- benture.....	£15,405,797		5.85	104½	100½
Buenos Aires Great Southern 5% de- benture Non Cumulative Preferred	£8,000,000		6.55	120½	114½
Brazil					
Great Western 4% Debentures.....	£1,644,700	1955	8.34	96½	91½
Sao Paulo, ordinary.....	£3,000,000 (Stock)		5.47	217	202½
Sao Paulo, 4% Debentures.....	£1,000,000 (Stock)		5.66	104½	100½
Leopoldina 4% Debentures redeemable after 1928 Company's Option.....	£4,495,300 (Stock)	1928	6.50	97½	92½
Chile					
Nitrate Railways, ordinary.....	£1,485,340 (£10)		5.55	15	12½
Uruguay					
Central Uruguay Eastern Extension Permanent Debenture Stock.....	£1,146,666 (Stock)		6.16	109	103½
Chile and Bolivia					
Antofagasta and Bolivia 5% Cumula- tive Preferred.....	£2,000,000 (Stock)		6.27	110½	103½
Argentina					
River Plate Electricity Co. Stock....	£175,000 (Stock)		4.72	240	220
Anglo Argentine Tramways 4% de- bentures redeemable '68 @ 102....	£4,222,076	1968	6.42	97½	91½
Buenos Aires La Croze Tramways 5% Cumulative Mortgage.....	£1,065,400		7.27	101½	97½

PRICES ON LONDON MARKET 1911 TO DATE¹

1912		1913		1915		1916		1917		Jan.-June 1919		August 1919	
H	L	H	L	H	L	H	L	H	L	H	L	H	L
101	96½	100	93	89½	80	86	77½	84½	76	87	82½	85½	82
104	100	103	95½	92½	76	84½	76	88	77	96½	87½	91	83
102	97	99½	95	86	73⅞	88	76½	87	78	89	83½	84	79¾
100½	96	102	96	86	69	91½	79	91	82	93¾	90	94	91
101½	98½	99¾	94¼	97¼	87½	87½	75	87	74	100¼	92	95	94½
73¾	66½	70¼	63½	43	35	51⅞	45	49¼	44½	56	51½	54	47¾
102	97¼	101¾	99¾	98½	80¾	98¼	83	98	86	101¾	94	96	95
103	99½	102	97½	96½	90	91½	86	86	80¾	90	86	82	80
93	90	91¾	88	70¾	68	71¼	64½	72	66	76	72	74	74
100½	96	100	92¼	80¼	64¾	79	73½	77	73	82	79½	80	78½
102¼	95	100	88⅞	80	70	77	67	81	74	86	80	87¾	86
106	101½	104	100	100	90	99	90½	99¼	92	98	95½	97	96
105¼	101¾	105¼	101¾	97½	92½	94	91	92	89	96½	93½	94¼	94
102¾	98¼	100	93¼	90½	76¼	84	72	76½	68⅞	72¾	67½	68	66
105	99⅞	103¼	97¼	93¼	77¼	86	73½	76¾	65½	74¼	63	65	61
103½	98½	101¾	93	92	76½	85¼	74	77	69½	73½	68½	69	68
120	112½	118¾	109	105½	85	97½	84½	89	78	85¼	78¾	78¼	77
95	88	88¼	83¼	78	69½	71¼	63	69	61¼	71	66½	65.5	56
264	205	270	226	208	158	196½	170	191¼	164	191½	170¼	189	165½
102¾	99½	99½	94	90	74¾	85	73	76	71	74	70	71	69¼
97	91	93¼	85½	80¼	64	83	61	72⅞	61	69	65½	63	60¾
15	12	14¼	13⅞	10⅞	7	12	9⅞	13½	10½	12⅞	9½	9	9
111	103½	105¾	98¾	88	78	85½	79	80½	75	85	81½	81½	81
112	104	110	100	96	80	92½	81	87	79	83	80½	80	79½
260	230	222	207½	190	190	130	110	150	124½	170	145½	148	148
97½	91½	94¾	89	87	69½	77	65	72¾	64½	74¼	67	70½	67
103	97¾	101½	96½	101½	87	68¼	60	67½	60	69½	65	69½	69½

TYPICAL SOUTH AMERICAN BONDS—

	Amount Quoted (Value or Number)	Re- demp- tion Date	Yield on Latest Price, Per Cent	1911	
				H	L
QUASI PUBLIC—Continued					
<i>Bolivia</i>					
Electric Light & Power Co. of Cochabamba 6% Bonds.....	£240,520		7.08	98 $\frac{3}{8}$	92
<i>Brazil</i>					
Sao Paulo Electric 5% Bonds, 1962..	£2,000,000	1962	6.55	..	..
<i>Peru</i>					
Peruvian Corporation Mortgage Debentures.....	£4,824,050		6.81	107	103
PRIVATE COMPANIES					
Argentine Iron & Steel Debentures..	£278,500		6.5	..	..
Forestal Land Co. 5% Mortgage Debentures.....	£1,141,200		4.99	104 $\frac{1}{2}$	100 $\frac{1}{2}$
Lobitos Oil fields.....	£400,000 (£1 Shares)		3.55	1 $\frac{1}{2}$	$\frac{1}{2}$
Liebig's Extract 5% Cumulative Preferred.....	£1,000,000 (£5 Shares)		5.55	51 $\frac{3}{8}$	51 $\frac{5}{8}$
South American Stores 1st Mortgage Debentures 5 $\frac{1}{2}$ %.....	£837,000	1937	5.44		
River Plate & General Trust deferred	£250,000		7.32	172 $\frac{3}{4}$	159

¹ Source: *Investors' Monthly Manual*.
October 24, 1919.

PRICES ON LONDON MARKET 1911 TO DATE.—Continued

1912		1913		1915		1916		1917		Jan.-June 1919		August 1919	
H	L	H	L	H	L	H	L	H	L	H	L	H	L
96 $\frac{7}{8}$	90	97 $\frac{1}{2}$	89 $\frac{1}{2}$	84 $\frac{1}{2}$	80	84	78 $\frac{1}{2}$	86 $\frac{1}{2}$	74	89 $\frac{1}{2}$	82 $\frac{1}{2}$	87 $\frac{1}{2}$	87
94	92 $\frac{5}{8}$	97	90	82 $\frac{1}{2}$	70	83	74	80 $\frac{1}{2}$	72 $\frac{1}{4}$	82	79	83 $\frac{1}{2}$	82
108 $\frac{7}{16}$	102 $\frac{1}{2}$	107 $\frac{1}{4}$	101 $\frac{5}{8}$	100 $\frac{1}{2}$	80	85 $\frac{1}{2}$	75	89 $\frac{1}{2}$	78	94 $\frac{3}{8}$	89	89 $\frac{1}{2}$	87 $\frac{1}{2}$
100 $\frac{3}{8}$	98 $\frac{3}{4}$	103 $\frac{3}{4}$	96 $\frac{1}{4}$	86 $\frac{1}{2}$	65 $\frac{1}{2}$	93 $\frac{1}{4}$	81	94 $\frac{1}{2}$	84	95	92	93 $\frac{3}{4}$	92 $\frac{1}{2}$
99 $\frac{1}{2}$ 1 $\frac{1}{4}$	98 $\frac{4}{8}$	104 $\frac{1}{8}$ 1 $\frac{1}{2}$	99 1	99 $\frac{3}{4}$ 1 $\frac{3}{4}$	91 $\frac{5}{8}$ 1 $\frac{9}{16}$	104 $\frac{1}{2}$ 2 $\frac{7}{8}$	97 1 $\frac{1}{2}$	105 $\frac{1}{2}$ 2 $\frac{1}{8}$	98 $\frac{1}{4}$ 2	105 4 $\frac{1}{2}$	102 $\frac{1}{2}$ 2 $\frac{1}{16}$	104 $\frac{1}{8}$ 4 $\frac{1}{2}$	103 $\frac{1}{2}$ 4
5 $\frac{3}{8}$ 5 $\frac{1}{16}$	5 $\frac{1}{16}$	5 $\frac{5}{16}$ 5	5	5 $\frac{5}{16}$ 4 $\frac{5}{16}$	4 $\frac{5}{16}$	4 $\frac{7}{8}$ 4 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{5}{8}$ 4 $\frac{3}{8}$	4 $\frac{3}{8}$ 4 $\frac{1}{16}$	4 $\frac{7}{16}$ 4 $\frac{5}{16}$	4 $\frac{5}{16}$ 4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{9}{16}$
99 $\frac{5}{8}$ 189	98 $\frac{1}{8}$ 178 $\frac{1}{2}$	104 210	97 $\frac{1}{2}$ 187	98 $\frac{1}{4}$ 154	91 $\frac{3}{4}$ 144 $\frac{1}{4}$	105 $\frac{1}{4}$ 145	97 119	105 122 $\frac{1}{2}$	100 116 $\frac{1}{2}$	107 $\frac{1}{4}$ 142 $\frac{1}{2}$	105 132 $\frac{1}{2}$	106 $\frac{1}{2}$ 139 $\frac{1}{2}$	103 136 $\frac{1}{2}$

A. I. C. RESEARCH DEPARTMENT.
M. G. E.

The Effect of Taxation on Securities

By ROY C. OSGOOD

Vice-President, First Trust and Savings Bank, Chicago; Chairman, Taxation Committee of Investment Bankers Association of America

IN considering the effect of taxation on securities there will be examined briefly the general theory recognized by economists and then the practical effect of various tax measures showing the theory in application. By reason of the complexity of our tax systems and the conflict of tax influence caused by the diverse laws and rates of the several states and their political subdivisions, and because of the overshadowing influence of the present system of federal taxation made necessary by the late war, the treatment of the subject will be general with no pretense of being exhaustive.

GENERAL PRINCIPLES

Effects of Taxation on Bondholders

The Incidence of a Bond Tax.—In the application of general principles simplicity is desirable. For this reason let there be considered the theoretical effect of a tax upon the ordinary corporation bond. The two generally recognized taxes in the United States affecting such a bond are direct personal property taxes and income taxes. The personal property tax is generally imposed upon the principal of the bond. The income tax is imposed upon the interest the bond bears. To realize the effect of a personal property tax upon the principal of the bond, take the hypothetical case of a bond owned in a state having no personal property tax and no income

tax. If such a state were to pass a law imposing a 1 per cent tax upon the principal of a \$1,000 bond bearing 5 per cent the owner would be obliged to pay \$10 in taxes each year. This would reduce the income on the bond from \$50 to \$40 a year. If the state, instead of enacting the personal property tax just stated, were to pass an income tax law taxing the bond owner 20 per cent upon the interest of the bond, the owner would be obliged to pay \$10 in taxes each year. This would make exactly the same reduction in his income from the bond, which would then yield only \$40 a year. It may be seen, therefore, because as a general proposition all taxes are paid out of income, that it is immaterial, in considering the effect of a tax on the bond, whether the tax is based upon its principal or income. If the owner of the bond has a capital of \$100,000 consisting entirely of similar bonds, the effect of the tax in either case is a reduction of his income from \$5,000 to \$4,000 a year so long as he holds the bonds and they are subjected to such taxes.

The Capitalization of a Tax.—What effect would such a tax have upon the price of such a bond should the owner desire to sell it? If the ordinary investment return at the time were 5 per cent upon such a bond selling at par, the price of the bond would fall from par to 80, and he would be able to realize only \$800 in the case of

a sale. The purchaser would demand the going return of 5 per cent on the bond and, if he bought it for \$800, he would obtain a net return, after paying the \$10 tax, of \$40 a year, which is 5 per cent on \$800. This change of price is called the capitalization of the tax and is the general principle affecting the taxation of securities. In this process the tax is discounted by a depreciation of the price of the bond equivalent to the capital value of the tax. The purchaser avoids the burden of the tax, which he must pay annually, by giving a price for the bond that will allow him to pay the tax and still receive the normal interest return on his investment. In this case, the burden of the tax falls entirely on the original owner of the bond because he owned it before the tax was imposed. The purchaser who discounted the tax will realize the price he paid when he makes a sale, assuming that the same conditions obtain, and that all future purchasers under like conditions will do the same.

Effect of Evading a Tax.—Suppose, however, that the owner of the bonds needed an income of \$5,000 a year from them and could not afford to sell and take a loss of \$200 a bond, what are his alternatives? He must either evade the payment of the tax and become a law breaker or subject his securities to the law of another jurisdiction. In the case of the personal property tax he might accomplish the removal by placing the bonds in trust where they would be subject to a more favorable tax law or, in the case of both taxes, by changing his residence to a state where the tax laws were less burdensome. The tendency of the effect of the tax upon

the security market of the state would be the same in either case. The personal property tax would operate alike upon all holders of similar securities but the income tax would operate according to the size of their incomes. The necessity of evasion would have a detrimental effect in discouraging sales of taxable securities while the removal of capital to other jurisdictions would lessen the supply of capital in the particular investment market.

Effect of Taxation on the Borrower

To Raise the Interest Rate.—Having examined the effect of such a newly imposed tax upon the holder of bonds, who is the lender, what would the effect be upon the borrower, or the maker of the bonds? If the borrower had disposed of the bonds before the imposition of the tax it would be advantaged to the extent of its ability to purchase its bonds in the open market at \$800 for each \$1,000 and thus retire at a discount that portion of its debt which it might be able to purchase. If, however, the bonds constituted a part of an open issue and it became necessary to sell a further amount of the same kind of bonds bearing the same rate of interest after the imposition of the tax it would be obliged to sell them on the basis of a market of 80 and would thus lose to the extent of the discount. This would capitalize the tax for the benefit of the purchaser.

If the mortgage securing the bonds permitted a change in interest rate, then the corporation might avoid the discount by capitalizing the tax through an increase in the rate of interest. In order to sell the bonds at par when the personal property tax is 1 per cent

of the principal, the rate of interest on the bonds would have to be increased from 5 to 6 per cent. The purchaser would then receive a net return of \$50, or 5 per cent on his investment. In the case of a 20 per cent income tax the theoretical rate of interest would need to be increased to 6.25 per cent so that the bondholder would receive \$62.50 interest each year, and after paying a 20 per cent income tax, which would equal \$12.50, would have left \$50 or 5 per cent on his investment. In the case of selling its 5 per cent bonds at 80 the corporation would pay 6.25 per cent for its borrowed money and in the case of raising the interest rate to yield 5 per cent to the investor it would be paying either 6 per cent or 6.25 per cent dependent on the tax method. In either case the effect of the tax is to raise the interest rate on new borrowings. The tendency to drive capital from a given investment market on the one hand, by lessening the original lender's return on his investment, and the raising of interest rates to the borrower in the case of new borrowing, on the other hand, have the effect of increasing interest rates toward a point that will capitalize the tax.

Effect of Higher Interest Rate.—It seems clear that the main effect of the tax is to increase the cost of borrowing. Until new capital is needed the borrowers who secured capital before the imposition of the tax are benefited to the extent of the increase in rate. When the time of new borrowing arrives, however, all borrowers are placed in the same position. Inasmuch as the tax is an addition to the cost of money, the lender will endeavor to secure what he considers a normal

investment return by increasing the interest rate. Unless this can be accomplished the income of the lender will be diminished and the supply of funds seeking investment will be reduced. Unless the lender can secure a normal return on his money from the taxed securities he will transfer his funds to untaxed securities, while the tax will turn away new capital that would normally seek the particular investment field. In either case the supply of funds for the particular class of investment will diminish and capital, if invested, will demand an increase of rate. The borrower, therefore, stands the burden of the tax.

Factors Influencing Interest Yield.—The foregoing illustrations of the general principles governing the effect of taxation have been put in the simplest form for purposes of clarity. As a matter of practice many other factors must be considered. There is no uniformity in rates of taxation among the states or even among different kinds of capital investments in the same state. An equal rate of tax on all capital is a practical impossibility. The rate of interest fluctuates according to seasonal and competitive demands. It varies according to the safety of the investment, the term of the loan, the character of risk and many other factors that could be mentioned. These various factors often obscure the capitalization of a tax and make it extremely difficult to determine the exact effect of taxation. In such cases taxation becomes one of a number of factors influencing the price of securities or the rate of their yield. Some of these factors will be considered in connection with taxes of a special character. In the

United States, the taxes that most affect the price of bonds at present are state taxes imposed on principal or income, and the federal income and excess profits taxes.

STATE TAXES

Difficulty of Measuring the Influences of State Taxes

There is no uniformity either of method or rate in the tax systems of the states that would enable an investor in securities to obtain a mathematical rule to measure their effect. If each particular money market were confined to the state lines within which state tax laws operate directly then definite rules for computing the effect of a definite tax might be formulated. The demand and supply of money do not, however, recognize political boundaries of states any more than they do those of nations. If any illustration were needed to show this, the method of establishing the districts of the federal reserve system would suffice. The districts ignore state lines and are based upon the normal lines of the commercial flow of money. Some states have graduated property taxes and others flat rates for all property. Some states have substantially a flat rate income tax while others have income taxes graduated as to rates. Some states exempt certain incomes and classes of property from taxation while others tax alike incomes and property.

Effect of General Property Tax in Illinois

As a typical illustration of the difficulty of computing the influence of a state tax on securities consider the situation in Illinois. This state

has a general property tax law and the constitution does not allow classification of property for tax purposes. For some years the tax rate has averaged around 2 per cent on the actual value of bonds. The rates for the several counties have varied, but in Cook County, where Chicago is located and where the major part of the personal property of the state has its tax situs, 2 per cent has been the rate for all practical purposes. Applying the capitalization theory, 5 per cent industrial bonds owned in Chicago, when the normal investment return on such bonds is 5 per cent, ought to sell at 60 and new issues of such bonds ought to bear 7 per cent. Neither of these results has followed, so the tax influence is overcome by other influences. Such bonds have sold for practically the general market price of securities of like rate and character. It is true in Illinois, as in other states having an unclassified property tax, that comparatively little personal property is reached by taxation so that the effect of the tax is negligible compared with the effect of the condition of the security market. The factor of competition under such circumstances completely obscures the effect of the tax rate.

If, however, the effect of the tax rate be considered in its application to securities of a local nature having a restricted local market, the effect might be more pronounced. For instance, if the bonds in question, instead of being underwritten by a dealer having a country wide market at his disposal, or being bonds of a character suitable to a general market, were bonds amounting substantially to a real estate loan issue in bond form and

were underwritten by a local dealer having a local market, the effect of the tax would be freer from the effect of general security market conditions as to rate of return. Such securities sell on a higher yield basis and probably the tax rate is one of the factors of the cause of increase. In states where the amount of personal property actually subjected to tax is as small as it is in Illinois, it is impracticable to attempt to estimate the effect of the tax by any percentage factor even in the case of such securities. If, however, Illinois should change its policy of direct taxation of personal property to an income tax, the effect might be so marked as to be capable of expression in figures.

Effect of Income Tax in Massachusetts

The state of Massachusetts after proceeding for some years under a direct tax on intangibles, amounting to an average of 1.9 per cent, adopted an income tax amounting to practically 6 per cent on the income from intangibles. According to the officials in charge of the administration of the tax law, the effect of the change has been to greatly increase the amount of the tax base and they conclude that most of the property subject to tax, that had previously escaped the burden of taxation, has been brought under the operation of the tax law. The practical result has been a decrease in the rate of tax on the principal of securities from 1.9 per cent to 0.3 per cent. Such a marked decrease is bound to have an effect on security rates. If the states surrounding Illinois had in operation a personal property tax imposing substantially the same rate on personal property as

that imposed by the state of Illinois and then simultaneously changed their methods of taxation to an income tax operating to reduce the rate to 0.3 per cent, it is certain that the tendency of the effect of the new taxes would be to cause a flow of capital from Illinois into the surrounding states. This is indicated by the present condition of taxation as between the states of Illinois and Indiana. In Indiana the direct tax rate upon intangibles has averaged as much as 3 per cent. In addition the tax laws of that state have had a reputation of being more stringently enforced by means of drastic provisions for discovery and punishment than in most jurisdictions. The result is that investment capital has a greater tendency to come to Chicago than to go to Indianapolis, the natural investment center of the state.

Taxable and Tax Exempt Bonds

The effect of a state tax upon the price of bonds may be noted with more particular emphasis in a comparison of taxable with tax exempt securities of the same class. In Indiana, for instance, tax exempt municipal bonds sell somewhere around a 0.5 per cent lower yield basis than municipal bonds of the same character and rate that are subject to tax. The state of Ohio exempts from taxation municipal bonds issued before January 1, 1913. In the present market in the state the tax exempt bonds sell to yield around 4.40 to 4.50 per cent while bonds of the same class issued since that date sell on a 4.90 to 5 per cent basis. In the state of Georgia, where all local municipal issues are tax exempt, the local municipal bonds sell around a 4.75 per cent basis as

against a 5.10 to 5.20 per cent basis for other municipals of the same class that are taxable in the state. The effect of the exemption is thus to cause exempted securities to sell at a premium and taxed securities to sell either at a discount or to bear higher interest rates.

In 1905 Massachusetts exempted future issues of state bonds from taxation. The municipalities of the state asked for a similar exemption of their securities. Municipalities at the time were paying around 4 per cent on their issues. The tax rate of the state averaged from 1.5 to 2 per cent. So many of the obligations of these municipalities were held by exempt holders that the municipalities could not expect to receive a reduction in interest rate to the amount of the tax but the broader market opened to such securities, in consequence of the exemption, resulted in an immediate reduction of 0.25 per cent in the interest rate. Investigation disclosed that March issues of municipal notes sought around the tax date increased nearly 300 per cent between 1911 and 1916. Interest rates on these issues were very low, in some cases falling below 2 per cent and in others 1.3 per cent and even to 0.25 per cent. One city even received a small premium for accommodating an investor with \$100,000 of notes maturing near tax day.

Limitations of the General Property Tax

Instances might be multiplied to show the effect of state taxation. The effect of the state taxes, where their influence can be felt, may be worked out to fit the investor of each state in a substantially satisfactory manner. Any attempt to set out a

general rule is futile. The effort by the states to tax all property at a uniform rate is generally admitted by tax officials and economists to have been a complete failure in so far as it applies to intangibles. There have been tried four general substitutes. There is the mortgage recording tax, following the principle of the New York tax of 0.5 per cent based upon the face value of the debt secured by real estate mortgages, the tax being paid before recording the mortgage. This plan usually exempts from tax in the hands of the local holder the bonds or notes evidencing the debt. Then there is the plan of registering securities not coming under the mortgage tax and the payment of a fixed rate on the principal. In some cases this exempts securities registered for taxation until maturity; in others for a given period, such as the five year period in Connecticut. The third plan taxes intangibles at a rate lower than the tangible property rate. The fourth plan taxes the income rather than the principal. In 1912 the constitutions of two-thirds of the states prohibited the classification of property for taxation, but in the last few years about half of the forty-eight states have removed this constitutional restriction.

FEDERAL TAXES

The federal taxes more particularly affecting securities comprise the income tax and excess and war profits tax. The direct effect of federal taxation, which is uniform in its application, may be measured in some ways more definitely than that of state taxation, which is diverse both in method and rate. The chief difficulty

of measuring its effect accurately is due to the graduated rates. While the sixteenth amendment of the federal constitution permitting a tax to be levied upon incomes without regard to apportionment was adopted February 25, 1913, the first income tax law was enacted upon October 3, 1913, before the outbreak of the war, on account of depressed conditions causing a loss in revenue derived from imports. The effect of the law has been partially obscured by the outbreak of the European War in August, 1914, and the war conditions that have followed. Being a new tax imposed on top of all state taxes and having a country wide effect, its influence upon the security market has been very definitely felt in several directions.

Tax Exempt Securities

The influence of the income tax will be considered in its relation (1) to municipal bonds, (2) government bonds and (3) federal farm loan securities.

Municipal Bonds.—The exemption of the income from municipal bonds under the income tax law has been a dominating factor in the municipal bond market since 1913. The general yield of municipal bonds throughout the United States for the years from 1910 to 1913 was about 4 per cent. In 1913 the constitutional amendment authorizing the imposition of a federal income tax was adopted. By the middle of that year the yield had increased to 4.5 per cent and it fluctuated from this figure to about 4.25 per cent in the years 1914 and 1915 dropping to 4 per cent in the last of 1916. The yield steadily rose in 1917,

the year of our entry into the war, until in the early part of 1918 it had risen above 4.5 per cent and in 1919 it remained around 4.5 per cent. Making allowances for the effect of the conservation of capital with the consequent restrictions imposed on the issuance of municipals by the Capital Issues Committee, and the effect of liberty loan flotations, the federal income tax law has been a strong factor in holding down the yield which has risen from 0.25 to 0.5 per cent and which would probably have risen 1 per cent or more but for the tax influence. The general effect of the law, exempting such securities from the burden of the tax, was to cause funds that normally would have been invested in corporation bonds and mortgage notes to be diverted into stocks and municipal bonds. Dividends from stocks being exempt from the normal tax only and municipal bond interest being entirely exempt, the flow of investment capital toward municipals was greater.

This tendency of investment is strikingly illustrated by a comparison of the income figures of 1917 with those of 1916 as reported by the Commissioner of Internal Revenue. In 1916 the total personal income reported for tax was \$8,349,901,983 and in 1917 it was \$12,077,009,284. Of these totals the amount of *income from property* as distinguished from wages, business profits and the like, was \$3,861,150,687 in 1916 and \$4,469,901,354 in 1917. The income comprising interest from bonds, notes and the like was \$1,080,879,405 in 1916 and \$936,715,456 in 1917. This shows a decrease in the income from this class of investments amounting to \$144,-

163,949 in the face of a net increase in income from property amounting to \$608,750,667. What amount of the diversion went into municipal bonds is of course not disclosed by the income tax statistics. The following figures, showing the comparative yields of municipal and taxable bonds under the personal income tax rates effective for incomes of 1919, illustrate the effect of the income tax on municipals and upon the higher rates corporate securities must bear to reach an equal yield basis. These figures have been taken from computations believed to be reliable.

A municipal bond

yielding 3½%	yielding 4%	yielding 4½%	yielding 5%	When the holders net income is
is equivalent to a taxable bond yielding				
3.93	4.49	5.06	5.62	\$10,000
4.17	4.76	5.36	5.95	20,000
4.43	5.06	5.70	6.33	30,000
5.07	5.80	6.52	7.25	50,000
7.95	9.09	10.23	11.36	100,000
9.72	11.11	12.50	13.89	200,000
12.07	13.79	15.52	17.24	500,000

It is interesting to note what the effect would be if municipal bonds were taxed as some members of Congress ineffectually attempted when the 1918 revenue act was pending. In his last annual report the Secretary of the Treasury stated that the highest brackets of the surtax had passed the point of productivity and that the only consequence of any further increase would be to drive possessors of large incomes more and more to place their wealth in the large amount of wholly exempt securities issued and still being issued by states and municipalities. The weight of legal opinion is against the power of Congress to tax the income from municipal bonds, but

what would be the effect of the tax upon such income were it possible? To answer this question, consider the income of a citizen or resident of the United States who is married and has no children, and has a consequent individual exemption of \$2,000. If such a man has a net income of \$15,000, \$5,000 of which consists of income from state or municipal bonds, his tax now is \$590 a year. Under the present operation of the law his tax is computed on the brackets up to \$10,000. Under the changed computation he would bear a tax on the brackets up to \$15,000 and his tax would be \$1230. This would add \$640 to the tax. The \$640 additional tax would be imposed on account of his income of \$5,000 from municipal bonds. Assuming the \$5,000 income to be interest at the rate of 4.5 per cent on the bonds at par, the principal would be \$111,111.12 and the tax would equal approximately 0.57 per cent, reducing the yield of the bonds to 3.93 per cent. The higher the net income the greater would be the increase in the tax and the lower the yield on the municipal bonds. On the other hand, all of the bond income would be taxable and the net income yield on the same basis of computation for the individual owner of income may be illustrated as follows:

Taxable Income	Rate of Income on Investment				
	4%	4½%	5%	5½%	6%
Net Income Yield					
\$5,000	3.904	4.392	4.880	5.368	5.856
10,000	3.764	4.235	4.705	5.176	5.646
20,000	3.602	4.052	4.503	4.953	5.403
50,000	3.265	3.673	4.081	4.489	4.897
100,000	2.752	3.097	3.441	3.785	4.129

Government Bonds.—The effect of the tax upon our government bonds is

not so easy to determine on account of the complications of exemption provisions contained in the laws authorizing the various liberty loan issues. The Panama 3's, which did not bear the circulation privilege, sold in the years from 1910 to 1913 at about 102.25 and then yielded approximately 2.90 per cent. The same bonds today sell for about 90 and yield about 3.5 per cent. In the years from 1910 to 1913 municipal bonds had an average yield of 4 per cent. The difference in yield between these bonds and municipals was about 1.10 per cent. Today municipal bonds average to yield about 4.5 per cent and the difference in yield is about 1 per cent. As an illustration of the effect of the income tax, comparison may be made between the bonds of the non-taxable 3.5 per cent first liberty loan and the bonds of the taxable 4.25 per cent fourth liberty loan. In the January 1920 market the 3.5's sold around 99.90 while the 4.25's sold around 92.70. Outside of the effect of the ten-year difference in the terms of the two classes of bonds, the income tax caused the bonds bearing 0.75 per cent more interest to sell about 7 points lower on the market. Neither class of bonds was subject to state taxation but the 3.5's were entirely tax exempt while the higher rate 4.25's were exempt from the normal tax only.

Federal Farm Loan Securities.—The effect of the income tax may be further illustrated in the case of the federal farm land bank and joint stock land bank bonds which are free from all United States and state taxes. These bonds bear 5 per cent interest and sold in the January 1920 market to

net about 4.75 per cent. Municipal bonds, which are not subject to federal taxation but are taxed in most of the states, sold in the same market from a 4.50 to a 4.75 per cent basis. With these farm loan securities yielding 4.75 per cent they are equivalent to a taxable bond yielding 5.62 per cent; to an individual having a taxable income of \$20,000 and to one having a taxable income of \$50,000 they are equal to a taxable bond yielding 6.88 per cent.

The Tax Free Covenant

The act of 1913 contained a provision requiring the normal tax, which was then 1 per cent, to be withheld at the source and requiring ownership certificates to accompany all coupons from corporate bonds at the time the coupons were presented for collection. This disclosure of information and the attendant annoyance caused to taxpayers who owned this class of securities influenced a gradual trend of investment from corporate bonds into corporate stocks and mortgage notes, in addition to the trend of investment into municipal bonds brought about by the general provisions exempting them from taxation. As a result of a somewhat similar provision in the income tax laws enforced during the Civil War, there existed, at the time of the passage of the income tax law of 1913, in about 70 per cent of the outstanding corporate bonds of the country, what are known as "tax free covenants." These covenants, in substance, require the obligor of the bonds to pay any income tax which may be required by law to be withheld from the interest paid to the bond owner. Such a covenant became effective under the withholding provisions of

the act of 1913 and had a certain effect in arresting diversion of funds from corporate bonds into mortgages and stocks.

Applying the principal of capitalization to the normal income tax of 1 per cent it would work in theory as follows: The charge to the corporation assuming a normal income tax of 1 per cent upon the interest of a 5 per cent bond is 0.05 per cent a year, so that instead of the corporation paying 5 per cent per annum for the use of its money it would pay 5.05 per cent per annum. This 0.05 per cent capitalized would be about 1 per cent of the face of the bond, or one point in its selling price. This would mean that a corporation in selling a 5 per cent bond to the wholesaler would have to receive 1 point more for the bonds in order to capitalize the normal income tax of 1 per cent. To state it another way: If the owner of a 5 per cent \$1,000 bond had to pay the normal income tax on it he would receive an annual net return of \$49.50 instead of \$50. The result would be the fall of the bond's selling price to 99 which would net him about 5.05 per cent annually or 5 per cent net after paying the tax. If the corporation failed to pay the tax its bonds would bring it 1 per cent or 1 point less and instead of selling at par would sell at 99. If it agreed to pay the tax and received par for its bonds it received the benefit of the capitalization of the tax, and in assuming the tax under a tax-free covenant was out no more than it would have been by failing to assume it and receiving less for its bonds. If the capitalization of a tax of this character were unaffected by other economic factors this would

be the advantage gained by the corporation in selling its bonds with a tax-free covenant and assuming to pay the normal federal income tax.

Other factors enter into the problem of the sale price of bonds but the above illustration shows the trend of the effect of the tax and its capitalization. A good illustration of the effect of the 1 per cent normal tax paid under the tax free covenant existed in a comparison of prices of Chicago and Northwestern Railway 4 per cent general mortgage bonds maturing in 1987. Certain of these bonds issued prior to the passage of the act of 1913 contain the tax free covenant. Certain others, issued after that time, secured by the same mortgage, do not contain this covenant. In a range of prices covering the year 1915 the tax free covenant bonds were quoted and sold about 1 point higher on the market than the same bonds not having such a covenant. The act of 1918 allows the normal tax to the extent of only 2 per cent to be paid at the source under such a covenant.

Some corporations that found this covenant effective for the first time attempted to obtain a repeal of the provisions of the law giving effect to it but Congress concluded that, since the use of the covenant was so prevalent and had such an effect upon the corporate security market, it was unwise to make the requested change.

Preferred Stocks

The income tax law and the excess and war profits tax law had a strong influence in changing the trend of corporate financing by causing the issuance of preferred stocks instead of bonds. The act of 1913 levied a

normal tax of 1 per cent and, in the case of income derived from coupon bonds and in certain other cases, required the normal tax to be collected at the source of payment unless exemption was claimed by the owner as allowed by the law. In order to determine whether or not the normal tax should be collected, an ownership certificate was required to be signed by the owner of the income and to accompany interest coupons presented for collection. The same law provided that no normal tax should be collected from the recipient of dividends from corporate stock, because the corporation was required to pay a tax equal to the normal tax on the earnings from which the dividends were paid. The irritation caused by the disclosure of ownership of corporate bonds through these ownership certificates on the one hand, and the escape of dividends from the direct burden of the normal tax on the other, caused a tendency toward investment in stocks rather than in corporate bonds. This was accentuated when the subsequent laws substituted information certificates for the former ownership certificates and then gradually raised the normal tax to its present rates of 4 and 8 per cent. With the tax at the last figures the yield on preferred stocks may be illustrated as follows:

<i>Taxable Income</i>	<i>Preferred Stock 6%</i>	<i>Dividend 7%</i>	<i>Rates 8%</i>
<i>Net Income Yield</i>			
\$5,000	6.00	7.00	8.00
10,000	5.93	6.92	7.91
20,000	5.79	6.75	7.72
50,000	5.34	6.23	7.12
100,000	4.59	5.35	6.12

It will be seen from these figures that a person having a net income of

\$5,000 or less in dividends escapes the tax entirely and, in the case of incomes over this amount, escapes the normal tax of 4 and 8 per cent. This saving gives preferred stocks the advantage over bonds and notes to the extent of the normal tax. This is the advantage to the owner of the income.

The exclusion of borrowed money as invested capital in the computation of excess and war profits tax has had an influence on corporate financing methods. The revenue act of 1918 imposed an excess and war profits tax which first applied to corporate incomes for the year 1918. It provides that borrowed money may not be included in the computation of invested capital, on which are based the tax credits. Preferred stock may, however, be included in the computation of such invested capital. To illustrate the effect of these credits upon preferred stocks, take a case of 1918 income to which the highest rates of the law apply. Assume a corporation having \$1,000,000 of employed capital earning 6 per cent net in the pre-war period and 15 per cent in 1918, before deducting fixed capital charges. If the employed capital of \$1,000,000 were represented by \$500,000 of common stock and \$500,000 of 7 per cent preferred stock the corporation had an invested capital of \$1,000,000 within the meaning of the law and was entitled to 8 per cent of \$1,000,000, or \$80,000, as its excess profits tax credit. This was deducted from its net income before computing the excess profits tax. It would, in computing the war profits tax be entitled to deduct a credit of 10 per cent, or \$100,000. If the cor-

poration, on the other hand, had the same employed capital represented by \$500,000 of common stock and \$500,000 of bonds bearing 6 per cent it would be allowed credits of 8 and 10 per cent on the \$500,000 common stock, or \$40,000 as the excess profits credit and \$50,000 as the war profits credit. In addition the corporation could deduct 6 per cent interest on the \$500,000 of bonds, or \$30,000, as an expense item. Eliminating the specific credit of \$3,000 for simplicity of computation, the tax, in the case of the corporation having preferred stock, would amount to \$40,000. This, added to the fixed charge of 7 per cent, or \$35,000 of dividends, on the \$500,000 preferred stock would make a total annual charge of \$75,000, or 7.5 per cent upon the \$1,000,000 of employed capital. In the case of the corporation having bonds the tax, similarly computed, would be \$56,000. This, added to the fixed charge of 6 per cent, or \$30,000 of interest on the \$500,000 of bonds, would make a total annual charge of \$86,000 or 8.6 per cent upon the \$1,000,000 of employed capital. This shows that the corporation was better off to the extent of 1.1 per cent annually on its entire employed capital by financing with half preferred stock paying 7 per cent dividends, than with half bonds paying 6 per cent interest. Of course, the advantage would increase or disappear, dependent on the amount of capital, pre-war earnings and tax year earnings but where the advantage existed, as it did in many cases, it had the added effect upon the trend from bond to preferred stock financing.

Thus it may be seen that the advantage to the holder of preferred stock over bonds, to the extent of the normal

tax on the one hand, and the advantage to the borrowing corporation, that existed, in many cases, on the other hand, had the general effect of causing a large increase of preferred stock financing and a relative decrease of bond financing. The advantage to the corporation of preferred stock financing is not so pronounced and more often disappears in 1919 and subsequent year incomes. For instance, using the same illustration based upon 1919 income the corporation would be \$3,000 a year better off by financing with bonds instead of preferred stock. The stock financing would make the total capital charge to the corporation 4.9 per cent as against 4.6 per cent in the case of bonds. This is because the law provides for the elimination of the war profits tax of 80 per cent and a reduction in rates of the excess profits tax for incomes after 1918 but the advantage to the investor still remains, lessened only by the reduction in rates of the normal tax which are effective as to 1919 and subsequent year incomes.

Effect of the Excess and War Profits Tax upon Municipal Bonds

Certain provisions of the excess profits tax law relating to what are called inadmissible assets have a material effect on the sale of municipal bonds to corporations. When the excess and war profits tax provisions of the law were enacted the framers considered it unfair to allow corporations to base credits upon capital that did not produce income taxable to the corporation. For this reason municipal bonds were excluded in the computation of invested capital. Because of accounting complications, due to the effect of borrowed money, the act

of 1918 was drawn so that the exclusion of municipal bonds was made proportionately. In order to illustrate the effect of this exclusion upon the yield to corporations from municipal bond investments, consider a simple case having no borrowed money complications. Assume a corporation having a capital stock of \$800,000 and a surplus of \$200,000, the \$800,000 being invested in admissible assets and the \$200,000 surplus in municipal bonds bearing 4 per cent interest. Assume that the pre-war earnings of the corporation were 8 per cent and that the net earnings for the tax year 1918, exclusive of bond interest, were \$150,000. Municipal bonds are inadmissible assets within the meaning of the law. Under the rule for the exclusion of inadmissible assets there would be excluded that proportion of the total invested capital of \$1,000,000 which the inadmissible assets, amounting to \$200,000, bears to \$1,000,000. This would exclude one-fifth of the total or \$200,000, leaving an invested capital of \$800,000 for the purpose of computing the credits of 8 and 10 per cent. The war profits tax rate would apply and, excluding the specific exemption of \$3,000 for simplicity in computation, the total tax would be \$56,000.

In order to observe the effect of the exclusion of municipal bonds as inadmissible assets upon the earnings of the corporation, assume that the corporation's surplus of \$200,000 were invested in 6 per cent corporate bonds. This would increase the taxable income to the extent of 6 per cent on \$200,000, making the total net earnings \$162,000. The corporation bonds would constitute admissible assets so that the invested capital for the purpose of the tax credit would be \$1,000,000 instead

of \$800,000 and the resultant tax would be \$49,600. In the case of the surplus being invested in municipal bonds the total net earnings of the corporation would be \$150,000, plus 4 per cent on \$200,000, or \$158,000, which, less the tax of \$56,000, would leave net earnings of \$102,000. In the case of the surplus being invested in corporation bonds the net income of \$150,000 would be increased by 6 per cent on \$200,000, making a total of \$162,000, which, less the tax of \$49,600 would leave net earnings of \$112,400. Thus the total net earnings of the corporation in the case of holding the 6 per cent corporate bonds would be \$10,400 or 5.2 per cent more upon the \$200,000 of surplus. In other words, the corporation by holding the municipal bonds has not only failed to benefit from the income upon them but they have cost the corporation 1.2 per cent in addition to causing a loss of the 4 per cent interest received. The effect of the tax under the same circumstances for the year 1919, instead of 1918, would be far less on account of the elimination of the 80 per cent war profits tax and the consequent application of the 20 per cent excess profits tax rate. Under such circumstances it would cost the corporation only \$800 a year more to hold the \$200,000 municipal bonds than it would to hold the like amount of corporation bonds. This would result in a reduction of 0.4 per cent in the yield of the municipal bonds reducing it to 3.6 per cent. In this connection it ought to be stated that municipal bonds held by mutual savings banks, and other corporations specifically exempted from the operation of the income tax law, are not directly affected by this tax.

The Installment Plan and the Baby Bond

By ROBERT RIEGEL, Ph.D.

Assistant Professor of Insurance in the Wharton School, University of Pennsylvania

THERE is in financial literature a surplus of articles intended to reinforce the assumedly feeble will of the average American to save. The intention is not to add here another contribution to the voluminous literature designed to induce thrift but rather to describe some features of finance which have contributed in recent years to make investment easy, safe and profitable for the small investor. It must also be pointed out that these features, with all their attendant individual and community benefits, are subject like other human institutions to misuse.

AGENCIES OF THRIFT IN THE UNITED STATES

Arranged approximately in the order of their general use by the majority of the people, the agencies of thrift in the United States are (1) Savings banks, (2) Insurance, (3) Building-and-loan associations and (4) Security investments. For the past ten years considerable effort has been devoted to making the latter agency more readily available to the average person, culminating in the campaigns for the popular subscription of war funds. To make this agency for thrift effective among the greater portion of the population it is necessary to harmonize security investments with the means of the small investor, a necessity which may be met by either or both of the following methods:

(1) Enable the investor to pay for

the investment unit, stock or bond, on the installment plan. This is adapting the investor's purchasing power to the commodity to be purchased.

(2) Reduce the size of the investment unit, making it possible to purchase a share for \$25 instead of \$100 or a bond for \$100 instead of \$1,000. This is adapting the commodity to the investor's purchasing power.

ADAPTING PURCHASING POWER TO THE COMMODITY

The Installment Plan.—The partial-payment plan is not new in the sense that it is a radical departure from previous methods of doing business. Fundamentally, it is, like a margin purchase, the buying of securities by a customer, partly on borrowed money and partly on his own capital, the purchased securities serving as collateral for the funds borrowed. This transaction is, however, modified (a) by encouraging purchases by small investors and (b) by reducing to a minimum the highly speculative possibilities.

Odd-Lot Dealers.—Purchases by small investors involve odd lots,¹ and a few words are required to describe their significance, it being understood that odd lots may be bought outright and do not necessarily involve the partial-payment plan. Nor do partial payments preclude the buying of round lots, though this is rare. The odd-lot business is a specialty engaged in on

¹ Lots of less than 100 shares, which is the unit of trading on nearly all stock exchanges.

a large scale by relatively few concerns, although nearly all brokers occasionally handle small amounts. It is made possible by the existence of the odd-lot *dealer*,² who, as distinguished from a broker, derives his profit from the difference between the buying and selling prices of the securities he handles. He buys or sells odd lots and reverses these transactions in round lots by either combining the odd lots bought into a round lot or splitting up round lots purchased to deliver on his odd-lot sales. Such dealers are not numerous, five or six important firms being found in the membership of the New York Stock Exchange. Each firm, however, often has several partners owning Exchange seats and one firm controls eleven.

Odd-Lot Brokers.—The larger part of the odd-lot dealer's business is brought to him by odd-lot *brokers*. These do not differ from the ordinary commission broker, except that they are willing to buy or sell odd lots for customers, whereas with the ordinary broker this is more or less an accommodation. The odd-lot broker, however, not only accepts but even advertises for this class of business. The remuneration of the broker is a commission charged the customer, varying with the price of the securities.³ There are possibly sixty-five members of the New York Stock Exchange engaged to any extent in the odd-lot business. Of this number it is said that only three or four at most operate partial-payment plans, although the plan is extensively advertised by firms outside the exchange.

² In the United States the same individuals may operate in both capacities but in England these functions are sharply separated.

³ See page 172

One of the largest of the exchange firms carries on its books many thousands of odd-lot and partial-payment accounts.

USUAL OPERATION OF THE PARTIAL-PAYMENT PLAN

Character of Securities Bought.—With its place in finance, its scope and accompanying features in mind we pass to an examination of the usual operation of the partial-payment plan, with some comments on the variations introduced. The plan in its most desirable form presupposes that only high-grade investment securities are to be bought; otherwise those who can least afford to lose are encouraged to speculate. One firm tries to effect this by compiling a list of approximately ninety securities which may be purchased, with exceptions only for good reasons but with modifications as found necessary. Some other firms exercise little or no supervision over this matter. Even high-grade securities, if inactive, are not desirable from the broker's viewpoint, because of the impossibility of using the odd-lot certificates as collateral for bank loans.

Initial Deposits.—To purchase an odd lot on the partial-payment plan the customer makes an initial deposit of a portion of the purchase price. The following is typical of the initial deposits required:

On bonds		
\$100 denomination	\$10 a bond	
500 "	50 "	"
1000 "	100 "	"
On stocks selling		
Below 30	\$10 a share	
From 30 to 50	15 "	"
From 50 to 100	20 "	"
From 100 to 150	30 "	"
From 150 to 200	50 "	"
Above 200	Special terms	

A purchase of eight shares at \$90 per share would require a deposit, therefore, of \$160. A variation is to require a straight 20 per cent of the purchase price, which will average lower than the preceding scale. Curb houses sometimes provide for low-priced stock by a scale of deposits ranging from one dollar per share up. The balance of the purchase price is advanced by the broker, who has the certificate transferred to his name and borrows on it from a bank. On the eight shares at \$90 in our hypothetical case he would probably be able to borrow a little over \$600.

Monthly Payments.—The theory is that the customer will now pay for the stock in installments, making agreed-upon payments on the first of each month of at least \$5 on each \$100 bond bought, \$3 on each share of stock at less than \$30 and \$5 on each share at \$30 or over. In our hypothetical case the customer would agree to pay \$40 a month. In some cases the balance due is divided into twenty equal payments or 10 equal payments and the plan called a "twenty-payment plan" or "ten-payment plan." It will be noticed that with each monthly payment the customer's debt to the broker is decreased and his equity in the stock correspondingly increased. When fully paid for the shares are transferred to his name on the corporate books and forwarded to him. In the meantime he is credited with all interest or dividends paid on the securities bought and charged interest on the net balance he owes. This interest is usually at the rate money costs the broker but at least 6 per cent. Since call loan rates in ordinary times seldom exceed 6 per cent this is usually the rate charged. Since our hypothetical

customer is paying 6 per cent on the \$560 owed (eliminating commissions for the present) and is receiving the dividends on the par value (\$800) it is usually true that his money is earning interest for him while he is paying for the securities. One concern states that it absorbs the interest charge in its commission which is, of course, much above the usual rate.

Disposal of Accounts when Payments Lapse.—A very natural question is, what happens to an account on which the payments lapse? This may be treated in either of two ways. In the first place it may thereafter be considered as an ordinary margin account, provided the amount of the customer's deposit warrants it; if not, additional margin is called for and if not supplied the securities are sold. Secondly, it may be specially treated, as was the case with one firm, by being transferred into a special class of accounts on which a penalty is imposed in the form of an additional carrying charge of say 2 per cent a year. One large house employing this latter plan has recently abolished it.

Freedom of the Customer.—The customer may increase his payments at any time, may pay in full at any time and receive his securities, or if he decides to abandon the plan may sell at any time. It is the essence of the plan, however, that it is for investment purposes and is not to be employed to constantly speculate on market prices by conducting an active trading account. Some houses therefore will not handle an account which is obviously purely a small margin-trading account. In other respects the partial-payment plan resembles ordinary security transactions.

Calls for Additional Margin.—

One other feature deserves special mention. The amount the customer has on deposit with the broker is termed his margin. Prior to 1913 some houses, with no unfortunate results and with the excellent intention of further divesting the partial-payment plan of margin-purchase characteristics, guaranteed the customer under all circumstances against any call for margin over and above his regular monthly payment. Under a properly conducted plan this can be accomplished with perfect safety. In 1913, however, a resolution adopted by the Governing Committee of the New York Stock Exchange prohibited the carrying of accounts without proper and adequate margin⁴, and this guarantee was considered as violating the spirit of the resolution and consequently abandoned by Stock Exchange houses. Curb brokers likewise appear to refrain now from giving this guarantee. How such a guarantee can be given on securities which fluctuate widely and rapidly in price one can only speculate.

Broker's Commissions.—The broker receives for his services (1) a commission of at least \$1.50,⁵ (2) the use of the capital supplied by the difference between the amount the broker lends

⁴Resolution of the Governing Committee, New York Stock Exchange, February 13, 1913. Constitution of the New York Stock Exchange, with amendments to January, 1918, p. 99.

⁵The New York Stock Exchange and the New York Curb Association have prescribed commission rates, as follows:

New York Stock Exchange

Bonds $\frac{1}{2}$ of 1% of par value

Stocks

Selling below \$10	7.5¢ per share
" \$10 to \$125	15.0¢ " "
" \$125 or over	20.0¢ " "

Minimum commission, \$1.00

the customer and the amount the broker borrows from the bank and (3) any excess of interest charged the customer by the broker above what he pays for money borrowed. It should also be stated that odd-lot orders are usually executed at a slight concession, buying orders at one-eighth above and selling orders at one-eighth under the current market quotation.

BENEFITS OF THE PARTIAL-PAYMENT PLAN

From the standpoint of the individual the partial-payment plan has many advantages, among which are the following:

Small-Scale Investment.—It enables small investors to purchase high-grade securities with a small immediate expenditure of capital. This counteracts to some degree the usually unfortunate tendency of small buyers to purchase several shares of a cheap stock in preference to one share in a relatively conservative business. It also enables the small purchaser to invest his surplus as received and without delay. It provides a legitimate substitute for the so-called "bucket-shop."

Reinforced Will-Power.—The assumption of an obligation to make payments at regular intervals and the desire to own the security free of all encumbrance supply inducements to

New York Curb Association

Stocks

Selling below \$1	2% of total amount involved
" \$1-3	4¢ per share
" \$3-5	5½¢ " "
" \$5-10	7½¢ " "
" \$10-125	15¢ " "
" over \$125	20¢ " "

Minimum \$1.00

save. Each monthly payment increases the customer's equity and consequently his returns.

An Open Bargain Counter.—It gives the opportunity to purchase securities at a favorable price, while if immediate full payment were required the opportunity would be lost.

Investment Insurance.—It enables the small investor to practice distribution of risk, an advantage otherwise available only to the person of means. Carnegie's advice to put all the eggs in one basket and watch the basket is inapplicable to the average person because he is not sure which basket to put them in and because he has neither the ability nor time properly to watch the basket. The other alternative is to distribute investments so that the loss upon any one will be small compared with the total investment. Such a distribution may be made geographically, avoiding the large loss otherwise consequent upon the adverse business conditions of a particular community; industrially, avoiding the large loss consequent upon a depression in some few lines of business or on the basis of hazard, distributing purchases between bonds and stock or conservative and speculative enterprises.

Investment Service.—Reputable houses furnish the investor with an investment service, advising him as to the character of his investments, furnishing financial facts and suggesting combinations fitted to his needs. This is easily subject to abuse.

Investment Balance-Wheel.—The system operates to induce conservative trading, because, while in a margin transaction the customer may assume large obligations without foresight, under the partial-payment plan the

size of the periodical payment required will reasonably restrict his actions.

Increasing Income.—The plan has the advantage over other systems involving borrowing that the purchaser's equity in the securities is increasing and his debt and carrying charges consequently decreasing, resulting in a constantly increasing income reaching its maximum when the securities are paid for in full.

From the standpoint of the community the plan also has advantages.

Thrift.—It is universally acknowledged that thrift is a national asset, involving the conservation of resources and the accumulation of capital, and the benefit of the instinct developed by the partial-payment plan will be realized in many other directions.

Provision for the Future.—It enables the accumulation of funds for the support of the individual and his dependents after earning power has diminished or ceased, a burden which would otherwise fall on the community.

Manipulation.—It tends to create a wide distribution of the ownership of corporate securities, with consequently smaller opportunities for manipulation of prices.

Extension of the Capital Field.—It extends the field of potential capital by making everyone a prospective investor and capitalist to some degree, consequently widening the field for raising capital when necessary.

Community of Interest.—It enables the general public to share in the munificent returns supposed to be earned by large corporations and to the degree to which this opportunity is taken advantage of, it promotes a community of interest between "big business" and the general public.

ABUSES OF THE PARTIAL-PAYMENT
PLAN

But the more economically sound a plan is and the greater the need it satisfies, the more attractive a cloak it becomes under which to conceal activities entirely foreign to its purpose. So it is with the partial-payment plan. Great as are its possibilities, equally great are its possible abuses. One of the chief purposes of this paper is to show how deceitfully and destructively it may be misused.

(1) *It may be employed by an insecure business merely for the purpose of obtaining additional capital.*—It will be remembered that the customer's equity in the securities is growing with each payment made. Until the shares are transferred to his name this equity is assuming more and more the nature of a trust fund, though it is hard to draw the line of demarcation. The original margin is necessary for the broker's protection in the event of a decline in the price of the securities before any further payments are made. But it is plain that as the customer continues his monthly payments the amount on deposit gradually, and in time greatly, exceeds the amount necessary for the protection of the broker. To the extent that this is true the fund becomes the equivalent of a deposit in a savings bank or a payment in a building-and-loan association. And yet, strange as it may appear, it has thrown about it none of the protection afforded bank deposits or building-and-loan funds. The broker may use it as he pleases, provided only that he be ready to deliver the securities upon payment of the balance due by the customer.

If he cannot do this he is usually insolvent and the customer must take his chances among the creditors. Under such circumstances the character of the house with which the customer is dealing becomes of inestimable importance. Yet there is nothing to prevent any broker from starting a partial-payment plan.

(2) *When dealing with unreliable firms the customer may not get the benefit of the correct price.*—There may be a variation of perhaps a point between the high and low prices of the day, and it is reputed that customers are often charged the high price of the day when in fact their orders were actually executed at much lower figures. This, of course, is not peculiar to the partial-payment purchase; but in view of the care required to obtain any profit from this class of business it offers a peculiar temptation to illegitimate practices.

(3) *The unreliable firm may not buy the stock at all—"bucket" the order.*—Since the customer never sees the security until fully paid for, which is not usually for at least a year, the broker may notify the customer that the purchase has been made at a definite figure and then gamble on future prices, hoping to be able to buy it for much less. His anticipations may be realized, in which case the customer has been defrauded by his own hired and paid agent; or they may not, whereupon if many others have been treated in the same manner an insolvency ensues.

(4) *The broker may disappear with the funds in his possession.*—This danger is not peculiar to the partial-payment plan, but is augmented by the character of the plan. From

ordinary margin buyers the broker can never embezzle more than 10 or 20 per cent of the purchase price, whereas from the partial-payment buyers there is a constant influx of funds and a continual increase in the amount of other persons' property held by him. It might be expected, therefore, that an illegitimate enterprise would find the partial-payment plan a ready means of making ten or fifteen blades of grass grow where but one grew before.

(5) *The plan may also be used to entice persons to speculate recklessly who otherwise would abstain.*—Persons who abhor "buying on margin" will readily consent to enter into a partial-payment plan for conservative investment. Later it is easy to inveigle them into highly speculative purchases, to convince them that the partial-payment plan and margin buying are identical after all, and both harmless, and, finally, to have them buying and selling with tolerable frequency nearly any security. An active account, with frequent transactions, yields far more in the way of commissions than a partial-payment account which, at best, offers the hope of only an exceedingly small return.

(6) *Speculative Character of Accounts.*—Even where the broker is indifferent or opposed to the result described above, the account frequently assumes a speculative character without incitement and despite opposition. The customer himself never intends to buy and pay for the securities ordered, but merely regards the partial-payment plan as an opportunity for doing on a small scale what his means will not permit by the ordinary method. For the success of the plan, not only

the broker but also the customer must be sincere. For the broker closely to watch the state of mind of his many small customers as evidenced by their actions is too much to expect and this explains why firms which have exerted every effort conscientiously to administer the plan have not been entirely satisfied with the results.

The odd-lot business of brokers has apparently not yielded any large profit thus far because of the expense of the tremendous amount of clerical work involved and the disproportion of postage and miscellaneous expense to the commission earned. The recent tendency has been to increase the obligations of the customer. One large house has very recently proceeded to do this by the following requirements, the objects of which are self-evident:

(1) Acceptance of no partial-payment accounts carrying less than five shares of stock or \$500 par value of bonds.

(2) A minimum carrying charge sufficient to yield at least \$2 per account per month, including commissions.

(3) A usual transfer charge of 4 cents per share.

ADAPTING THE COMMODITY TO PURCHASING POWER

The second method suggested, of adapting the commodity to the investor's purchasing power by decreasing the size of the investment unit, is equally important but requires little description. This method was adopted in conjunction with the partial-payment plan in the sale of Liberty bonds and proved eminently successful. For years prior to this, however, the so-

called "baby bond" was being put on the market, and within recent years hundreds of such issues are available to the small investor. Lists of prominent bonds of \$50 and \$100 denominations are frequently published in the columns of magazines and space is not available here to reproduce such a list. One New York firm, at least, is now more or less specializing in the sale of bonds of small denominations directly to the public, eliminating the middleman's profit. Thus far there has been practically no deliberate application of this method to stock certificates, although it would supply all of the benefits of the partial-payment plan with very few of the abuses to which that plan is subject. To place commodities such as pianos and automobiles in the hands of persons of limited means, the partial-payment plan is essential, since these articles cannot be divided, but corporate capital is easily divisible and its adaptation to purchasing power consequently convenient. There is no reason, apparently, why \$10, \$25 and \$50 should not become standard par values for stock certificates instead of \$100.

It will easily be seen by retrospec-

tion that the baby bond idea has all the advantages of the partial-payment plan—encouragement of thrift, diversification of investments, restriction of speculation, provision for the future, diminution of manipulation, extension of the capital field and community of interest. It has worked satisfactorily in the case of bonds and it is curious that it has not been applied extensively to stock certificates, where the results would be even greater. One might anticipate that with a reduction of the par value to \$10 per share the interest in the Pennsylvania Railroad Company would be increased from 100,000 to 200,000 or 300,000 persons and that similar results would obtain in other large corporations. This is a possibility worthy of serious consideration by promoters and underwriters. A reduction in the par value of shares would produce all the benefits of the partial-payment plan and eliminate some of the abuses of this system. It would broaden the investment field in the United States and open up new fields for stocks and bonds of American corporations in foreign countries, where large denominations have always been a detriment to wide distribution.

"Blue Sky" Laws

By ROBERT R. REED¹

Of Reed, Dougherty & Hoyt, New York City

PURPOSE OF "BLUE SKY" LAWS

THE suggestion of a paper on "blue sky" laws is timely, although difficult to execute. "This law," as Bank Commissioner Dolley, of Kansas, stated in his 1912 report, "is something entirely new in the business world." The general evil, however, at which it is directed—fraud in the sale of property rights—is as old as the

institution of private property. This evil has been facilitated and supplemented by the creation and use of corporations; supplemented in the sense that in addition to fraud, we have reckless and improvident flotations—"a constant flow of capital into enterprises doomed in their inception"—and also facilities of corporate overreaching unknown to the common law.²

¹ Mr. Reed has been intimately connected with the development of "Blue Sky" legislation both individually and as counsel for the Investment Bankers Association of America and other clients.—*Ed.*

² The following introduction to Finlason's *Report of the case of Twycross v. Grant*, published in London in 1877, might well serve as a standing introduction to articles on this subject:

"When, half a century ago, the principle of association was largely applied to commercial enterprises, it became, as all good things are liable to be, grossly and lamentably abused, and the first fault was in excess. In the year 1824-25 two hundred and seventy six companies were projected, of which the aggregate capital, on paper, was £174,114,000. 'However absurd,' observes the historian, 'many of these schemes, the shares of some rose to enormous premiums, especially the foreign mines.' The cause of this excess, however, as the historian mentions, was a spirit of over-speculation, caused by redundancy of capital. People had so much money that they did not know what to do with it, and so they fell an easy prey to artful schemes. The immense multiplication of joint-stock schemes, many of them delusive, in which vast sums of money were lost, led in 1826 to the most tremendous revulsion in our commerce which threatened the entire country with bankruptcy. In the session of that year, Alderman Waithman brought the subject forward in the House of Commons. The alderman stated that within three years six hundred companies had been

formed—most of them for dishonest purposes. 'The directors of these fraudulent schemes worked with the market as they pleased, forcing up the prices of shares to sell, depressing them to buy and pocketing the difference.' . . .

Not only were no measures taken against the evil, but the measures taken were such as tended to increase it. The legislation on the subject was marked with singular fatuity. Not only did it afford every facility for the formation of companies, in affording an easy process for incorporation by mere registration, but it really afforded every facility for the formation of fraudulent companies, and took no guarantees for honesty of intention, for the stability of the projectors or the genuineness of the scheme. . . . It seems incredible, but such was the fatuity of a 'reformed' Parliament in dealing with such subjects, that the Joint Stock Companies Act positively allowed a company to be formed, registered and incorporated by the mere subscription of seven persons for a single share each. Of course, the result was that fraud, which this fatuous legislation may almost be deemed to have suggested, was largely practiced, and for the last thirty years innumerable companies have been thus formed, by a few interested schemers, with the design of risking other people's money, not in real and honest enterprise, but in a sordid traffic in shares."

The perspective afforded by a study of this problem in England, France and Germany, is of the greatest value. Much material of this character, including an interesting review of the

It is largely to these corporate possibilities of waste and of effectual but legal "theft" that "blue sky" laws are directed; they would prevent not only fraud but also whatever will, in the language of the acts, "work a fraud" on the unsuspecting purchaser. He must, in the opinion of the Securities Commission of Minnesota, "have a fair chance to gain by his investment." It is not necessarily a "fraud" to sell a man property without disclosing known defects. The doctrine of *caveat emptor* applies. But it may "work a fraud" upon him to sell him stock in a company whose chief asset is an option on a mining lease for which the promoter has received half the stock issue, even when, according to one view, this fact is disclosed. To promote this combination of evils the legislatures of

adoption and operation of the 1911 Kansas Act, will be found in a volume entitled *Company Capitalization Control* prepared in 1913 for the State Department of Canada by Thomas Mulvey, author of an annotated *Dominion Company Law* (1919). The responsibility of the state for much of the evil incident to corporate promotion was very recently emphasized by Judge Landis, of the federal court, in Chicago. In sentencing a promoter to ten years' imprisonment he is reported to have said: "The state of Delaware would face an indictment for licensing such corporations as the Pan Motor Company if I could summon a sovereign state into court." The student might read on this subject the address of Edgar H. Farrar of New Orleans, an ex-president of the American Bar Association, in the 1911 Proceedings of that body, also the several addresses of ex-Attorney General Wickersham on anti-trust legislation, and articles entitled *American Democracy and Corporate Reform*, in the *Atlantic Monthly* of January, 1909, and February, 1914. It is interesting to note that West Virginia and Arizona were among the first states to adopt "blue sky" laws, applying not to corporations organized in the state, but only to corporations and others selling securities in the state.

forty-eight states, more or less, have been vying with each other in the sale of corporate facilities, and now to restrain this combination of evils the legislatures of forty-eight states have been urged to set up a machinery to control, not the creation of corporations, but the distribution within each state of corporate securities. Some twenty-eight states, including Ohio, Illinois, Michigan, Wisconsin and Minnesota, have yielded to this demand. Some of the largest and wealthiest states, New York, Pennsylvania, Massachusetts, Indiana, Washington (by a referendum) and Colorado, have resisted this demand.

ORIGIN OF "BLUE SKY" LEGISLATION

In the year 1910, Bank Commissioner Dolley, of Kansas, former chairman of the Republican State Committee, a prosperous merchant and president of a local savings bank, inaugurated a remarkably effective newspaper agitation against "blue sky merchants" in that state. He became imbued with the laudable purpose, not only of driving these "get-rich-quick vultures" out of business, but also of organizing his department to serve the people in investment matters. "I am sure," he wrote in one of his circular newspaper letters, "we can give them some valuable advice and be of much assistance to them in investing their money where it will not be lost." In the same letter he promised "to remove these financial cancers entirely from our state—with the proper help from the legislature." The legislature complied promptly and, without adequate investigation of the subject, enacted the 1911 Kansas Act. Mr. Dolley's advertising genius again

asserted itself. In his 1912 report he was able to say: "The law is rapidly gaining fame all over the civilized world; and I believe that a large number of the states will adopt similar laws at the coming sessions of their legislatures. *I believe that a movement has been started that will eventually result in the regulation and supervision of all kinds of companies in the same manner as banks are now regulated and supervised.*"

The legislatures of fourteen other states "obeyed the impulse" propagated by Mr. Dolley. Several of them adopted his 1911 act without change; others committed, independently, equal follies. Mr. Dolley himself went out of office, and the 1913 Kansas legislature materially amended his act, taking, among other changes, its exclusive administration out of the hands of the bank commissioner. In 1915 the entire act was repealed and a new "speculative securities" act was passed.

THE KANSAS ACT OF 1913

It would be impossible to analyze intelligently and briefly the early 1913 statutes. It is sufficient to say that the Kansas, and similar acts, prohibited the offer or sale of any security (with a few exceptions) without a permit from the state based upon the findings of a state official. These findings must certify that the "proposed plan of business and proposed contracts contain and provide for a fair, just and equitable plan for the transaction of business, and, in his judgment, *promises a fair return on the stocks, bonds and other securities offered for sale by it.*" It is quite evident from the language used that the original draftsman either knew nothing

of the normal investment security business, or was unaware that both it and the ordinary borrowing of a private business concern were included in his primary prohibition hence subject to the regulatory provisions of the act. The whole conception of the law was that of a typical promotion enterprise by the issuing company. These acts were hopelessly crude and unworkable; they covered an administrative field which could not have been covered in operation by several hundred trained employes; little effort was made to enforce them according to their terms, although they proved effective in several states as a club to frighten "blue sky merchants" out of the state, and to some extent made conservative outside dealers withdraw from the state. Heavy losses resulted in some cases. They were (as are the present laws) capable of serious and corrupt abuse, and they were held unconstitutional in three federal court decisions concurred in by eight judges. (*Alabama Transportation Co. v. Doyle*, 210 Fed. 173; *Compton v. Allen*, 216 Fed. 537; *Bracey v. Darst*, 218 Fed. 482). Most of these laws have been either repealed, materially amended or have become obsolete.

In their inception, these laws were an instance of the "rapid action" by which, as Bagehot says, "excellent people fancy they can do much—that they will most benefit the world when they relieve their own feelings; that as soon as an evil is seen something must be done to stay and prevent it." Since 1915 the development of "blue sky" laws has been characterized by "animated moderation," which the same writer praises as a special virtue of "government by discussion." Some

of the lengthy "blue sky" history of 1913 to 1915 is given in the note.³

³It seems necessary to mention the litigation and court decisions, in which the writer, as counsel for the Investment Bankers Association of America, had a professional interest. The Investment Bankers Association of America owed its origin, in part, to a desire among reputable dealers in securities to attack and diminish fraud in their distribution. One of its prime movers, Mr. Warren B. Hayden, of Cleveland, later president of the Association, addressed the first convention on "Blue Sky Legislation," and his address, published in the 1912 Annual of the Association and widely commended, may be said to represent the viewpoint with which the Association approached the subject. The Association formulated, and in 1913-14 urged a proposal along the lines of Mr. Hayden's suggestions. A measure embodying these suggestions became the Maine Act of 1913, and in 1917 New Hampshire followed with a similar act. The 1913 Iowa and Michigan acts, representing crude efforts to improve on the Kansas law, contained specific penal provisions which made it unsafe to ignore them. Counsel advised the Association that these acts were, in their opinion, unconstitutional. Suits were commenced to contest the acts, and the result was that the reported decisions held them unconstitutional. These decisions were followed by the federal court decision, which held invalid the West Virginia 1913 Act, which was based on the 1911 Kansas Act. No appeals were taken from these decisions. "Blue sky" agitation of the extreme type seemed to be declining. In 1914 following a general "blue sky" discussion, the first if not the only such discussion ever held by a national association, a committee was appointed by the National Association of Supervisors of State Banks to cooperate with "the so-called investment bankers" in the effort to formulate an effective law. This committee reported in 1915 a "fraud act" based on the fraud section of the federal postal laws, and containing a section requiring notice to a state official of any proposed general offering, and also a section giving complete power of official investigation and prosecution. A copy of this proposal, with the committee report, is found in the 1915 *Proceedings of the National Association of Supervisors of State Banks*, and also in the 1915 *Annual of the Investment Bankers Association of America*. The fraud section and the

investigation section constitute the 1916 Virginia Act, but, probably because of the omission of the essential publicity section, the Virginia legislature in 1918 supplemented the fraud act by a 1915 Kansas type of act. The fraud section of this proposal is found in the 1915 West Virginia and 1917 Minnesota acts. Another 1914 committee, that of the Attorneys General Association, of which the Attorney General of Michigan was the chairman, was not willing to have the problem settled by "government by discussion." The committee practically refused its cooperation and drafted a new proposed act which, without time or opportunity for discussion, was at once adopted in Michigan, Arkansas and South Dakota. This measure marked a distinct advance over the previous Michigan Act on which it was based. Its constitutionality was questioned and attacked, and subsequently two federal court decisions held it invalid. (*Halsey v. Merrick*, 228 Fed. 805; *Sioux Falls Co. v. Caldwell*, 230 Fed. 236.) Both cases were appealed and the Michigan and South Dakota acts were finally sustained by the United States Supreme Court.

The Ohio Act, which stands alone in its form and in most of its detail, was also held unconstitutional in the lower federal court on the authority of the earlier cases (230 Fed. 233), but was finally upheld by the supreme court. These three cases, involving the statutes of Ohio, Michigan and South Dakota, were argued and decided together (242 U. S. 539, 559 and 568) in the supreme court. The Michigan case was brought as a test suit, but, perhaps unfortunately, it reached the highest court in the company of two cases involving more or less typical "blue sky" evils. The result was a legal triumph for the attorney general of Michigan, reversing as it did the practically unanimous decisions in six lower court cases, and the generally accepted view that the principle of administrative control was unconstitutional. The three decisions must be read together. Although it can and should be said that the court does not seem to have thought it necessary to meet or discuss all the specific objections to these acts, it is clear that it decided that (1) the issuance of securities, (2) the business of dealing in securities, and (3) the general flotation or sale of a particular issue or block of securities may, without violating the federal Constitution, be made a subject of executive license and control. In commenting on some of the stronger general objections to the acts, Mr.

PRESENT "BLUE SKY" LAWS

The breathing spell and check given by the decisions holding the earlier laws invalid has been followed by the enactment of new statutes, eliminating the more obvious crudities of the earlier laws but in the main adhering to the original principle of executive control. It is not feasible to present the details of specific acts, but we can perhaps outline what may be called the prevailing type of a regulative law,⁴ the

Justice McKenna disclaimed any judicial responsibility for their wisdom saying, "we cannot stay the hands of government upon a consideration of the impolicy of its legislation. It costs something to be governed."

⁴The existing laws vary greatly. The 1915 Kansas Act is found in modified form in North Dakota (1915), Virginia (1918), Oklahoma (1919) and Wyoming (1919). It accepts the general suggestion, originally made by the Investment Bankers Association, of dealing distinctively with "speculative securities," but the term is so broadly defined that it is hardly safe to assume that any security (not specifically exempted) is excluded. The West Virginia 1915 Act also rests primarily on "speculative securities." This act was copied from a pamphlet circulated by the former corporation commissioner of Oregon, and was enacted in West Virginia apparently without the benefit of changes made by its proponent before it was introduced in the Oregon legislature, which body incidentally rejected the whole proposal. The Michigan 1915 Act mentioned in the preceding note is found in modified form in Arkansas (1915), South Dakota (1915) and South Carolina (1915). It was used as a basis for the Minnesota 1917 Act, but with many improvements. All of the other acts proceed on more or less independent lines. Those of Maine (1913) and New Hampshire (1917) are mentioned in the preceding note. The form and phraseology of the first Kansas Act may still be found to some extent in the laws of Idaho, Arizona, Montana, Tennessee, Missouri and Vermont. The last two acts contain discretionary exemptions which have made them relatively harmless against legitimate business. The Idaho Act is almost identical with the 1911 Kansas Act.

constitutionality of which has been sustained by the supreme court.

PREVAILING TYPE OF "BLUE SKY" LAW

The law prohibits the offering or sale of securities, with certain exemptions, except under the conditions prescribed by it. A violation is punishable, and may also have the effect of making a sale illegal, with a resulting suit for recovery of the purchase price (*Edwards v. Ioor*, 205 Mich. 617), and possibly for the recovery of damages against all parties concerned. The dealer in securities must secure an annual license, the granting of which is discretionary and revocable. This requires a fee and a large amount of detailed information, most of which, it may be assumed, is never read by the state official if he knows that the dealer is a recognized financial house. This law applies to all issuers of and dealers in securities. A non-resident issuer or dealer having no office in the state is an issuer or dealer under the law if he offers or sells securities in the state.

Before offering a particular security in a "blue sky" state the issuer or dealer must determine whether the law applies to that security. Certain kinds of sales, such as sales by the owner not in the course of repeated transactions, sales to a bank or dealer and new stock issues to existing stockholders, are exempt. Certain classes of securities are also exempt, including governmental and municipal bonds, approved public utility securities and securities senior thereto; securities listed and dealt in on approved exchanges or regularly quoted in newspapers for a year, and securities senior thereto; also certain classes of local

securities, such as bank stocks, commercial paper and first mortgage bonds or real estate in the state. Manifestly many sound and necessary investment offerings are not included in these exemptions.

If the security is subject to the law, the application for leave to offer it must be accompanied by a fee based on the amount proposed to be offered in the state. Detailed information as to the issuing company, its character, powers, properties, stock issues and business, is required to be furnished. A state official must be designated for service of process on the applicant in any future suit. Additional information may be required either in the first instance or from time to time. Appraisals and audits may be required, or an official investigation of properties made, without limit as to expense, but *all at the expense of the applicant*. The Securities Commission must examine the information furnished. Presumably it must continue its examination until it is satisfied that the proposed sale will not "constitute a fraud," or

"work a fraud" on the purchaser. It then issues a permit or license under which the securities in a named amount may be sold within the state. It is possible and usual in proper cases for it to condition the permit. This it may do indirectly by requiring the applicant to file a statement that the securities are to be sold under certain conditions, for instance, at not exceeding a named price. The law also empowers the commission to require the cancellation of any stock issued for property in excess of what it considers a fair value, and to require a deposit in escrow of any promoters' stock, to prevent its being sold prior to the fulfillment of prescribed conditions, or the demonstration of earning power over a given period. The permit to sell, like the dealer's general license, may be revoked for cause. It is required to be revoked if the licensee at any time refuses desired information, or refuses to sanction an expert investigation of his business or properties (possibly in Peru) at its own expense.⁵ Appeals may be taken to the courts to compel

⁵A state official, very prominently identified with the development of these laws, once remarked that "the difficulty of approving an issue on a South American property did not bother them." They had in fact just had such a case. They couldn't examine the property, of course, but they made the promoter give a bond securing investors in the state against loss. He added: "He was a good fellow; he gave the bond but I don't believe he tried to sell any of the stock." It is difficult for anyone with a national viewpoint of the subject to grasp the intelligent local viewpoint of this instance. It meant of course the practical cessation of this presumably legitimate offering in that state. A most complete and persuasive statement of the purpose and operation of the present laws is found in the 1918 report of the Minnesota Securities Commission. The following extract is illuminating: "The purpose of the law as stated in the pre-

amble is to prevent fraud in the sale and disposition of stocks, bonds or other securities. The term fraud as here used does not have reference to premeditated fraud alone. It includes transactions which are fraudulent in effect even though bad faith is not present. Just as much money is lost through the failure of *bona fide* but misguided business ventures as through out and out frauds. In either case the stockholder generally loses. Both should be prevented as far as possible and this was the object of the law.

"The primary question before the commission in every case is whether or not the sale of the particular security is fraudulent or will work a fraud on purchasers thereof. The commission has interpreted the law to mean that the sale of a security is fraudulent, or tends to work a fraud on the purchaser, *if the latter does not have a fair chance to gain by his investment. It is not sufficient that the money invested is secure against loss.*"

the issuance or prevent the revocation of a license. This type of act has been sustained by the supreme court.

FEDERAL LEGISLATION NECESSARY

It has seemed necessary to devote most of the space available for this article to an outline of the history and character of "blue sky" laws. In a sense they carry their own commendation to the average reader, and their own condemnation to the reader familiar with security offerings. The question of a remedy remains, both for the evil at which they are directed and for the evils which they have created. After several years of more or less intimate study of the subject, the writer has come to one quite definite conclusion. The first problem to be met and solved, in any intelligent effort to deal with the subject, is that of controlling the creation and original promotion of corporations and associations, and the solution of that problem lies with the federal government. Neither one nor forty-seven states can solve it and forty-eight states never will without federal compulsion. Although intelligent state officials with a purely local viewpoint may see no harm in circumscribing by state lines the important

national business of financing our industries, and, so far as may be, those of other countries, and may hope by local administration to stamp out the national evil of fraudulent flotations, all, whose viewpoint is national, must realize that the problem cannot be met in this way.

INADEQUACY OF STATE REGULATION

The business of marketing securities is predominantly interstate and not intrastate. It is not a business done at an office or over the counter, but one in which an established house in a central city has a clientele served by agents and mail in a large territory covering several states, or, on the other hand, a band of crooks without legal domicile who wander at will and "fly by night" from one state to another. Purely intrastate transactions can be left to the wisdom of a capable state official. He may be unduly severe with one and over trustful of another local flotation. But certainly in the smaller states local flotations are of a size and character which, as a rule, can be fairly judged and controlled, at least to the extent of preventing manifest frauds. This, of course, is apart from the political principle involved.

This administrative principle, so laudable in its statement, applies to the promotion of a mining property in Mexico, a railroad in China, an automobile invention, or a franchise or contract right involving legal pitfalls, or any other enterprise, the future of which is wholly speculative, a matter of individual judgment or guesswork. If the state bureau is convinced that there is "a fair chance to gain," it goes forward; otherwise it is stopped. It was admitted in oral argument in one of the reported cases that the promotion of the Ford automobile, which was originally financed as a pure speculation and considered visionary by business men, would probably have been disap-

proved under these laws. The state official has many means of informing himself on particular industries. In one important state, a very excellent official was said to keep posted on one class of enterprises through a personal friend in the business who advised him, speaking of his own competitors, to "watch them all." The Minnesota or Wisconsin investor can no doubt take his chances despite these manifest dangers, but the large Minnesota or Wisconsin enterprise seeking a broader market in other states may find its development thwarted when confronted with the burden of proving its business prospects to the satisfaction, not of one but of many state commissions.

It is, however, when we apply the conception of these laws to interstate flotations, good or bad and especially bad, that we realize their failure to fulfil their purpose. With the highest respect for the state officials, it is impossible to expect many of them to be able to cope with the complications and corporate machinery of large speculative or fraudulent interstate flotations. On the other hand, the laws themselves with the necessity of even a colorable compliance with them, are prohibitive of the normal investment interstate business. It is neither necessary nor worth the burden to include West Virginia or North Dakota or even Wisconsin or Michigan in a circular offering of new securities, and consequently the investors of those states are deprived of whatever value there may be in such offerings of investment securities. The larger New York and Chicago investment houses revise their mailing list on securities subject to the laws, while the speculative promoters and "get-rich-quick" merchants resort to various devices to evade the laws, possibly attracting inquiry by disguised news advertising and by closing transactions in a "non-blue-sky" state, or sending agents into a state to sell licensed securities or a fine grade of jewelry with a side-line, not of fake securities, but of tips on a rare opportunity to buy the same of the Bunkem Morgan Co., in Pittsburgh or Indianapolis. The states are too small and the business too large, complicated, important and profitable on speculative issues, for any hope of solution by state laws. Of course the fundamental evil lies in the laws of the corporation-making states, and it is hopeless to attempt to correct this evil by empowering the state offi-

cials of Wisconsin, Michigan and Ohio to exercise diverse judgments on the amount of stock which the state of West Virginia should permit to be issued for property in Oregon or Mexico.

FEDERAL RESTRICTION ON CORPORATE ORGANIZATION

We need a federal "blue sky" law. The constitutional difficulty must be met. A federal law reasonably adapted to the constitutional purpose of preventing fraud and deception in interstate flotations of securities would presumably be upheld. The fact should not be ignored that, although the power is to regulate interstate commerce, the jurisdiction of the federal government exercising this power extends to every part of the country. In the regulation of such commerce it may require such safeguards and preventatives as are adapted to its protection and freedom. It does not, so to speak, sit with a gun in hand on the imaginary boundary line of a state. An intra-state act injuriously affecting interstate commerce, including, it would seem, an act of the state itself creating a so-called "piratical corporate entity," designed as an instrument of interstate frauds, is within the federal jurisdiction.

If the creation and promotion of corporations under lax state laws is found to be productive of fraud in interstate commercial transactions, the creation of such corporations having power to engage in such transactions, may, it would seem, be prevented and controlled. If a corporation does not desire to engage in interstate commerce, it should not ask the power to do so. If it asks the

power to do so, it presumably intends to exercise that power. In a word, it would seem possible for the federal government by a restrictive law to condition and standardize the charters, organization and promotion of all corporations excepting those which are by their charters confined to the creating state, *i.e.*, prohibited from engaging in interstate commerce, and their securities forbidden to be sold in states other than the state of their creation. If this is so, the problem may be substantially dealt with under the federal power and from the viewpoint of controlling the original creation of and imposing the necessary limitations upon the corporation itself. The problem could then be met comprehensively and effectively, following, if desired the excellent examples already at hand in the British and Canadian Companies' Acts.

BENEFITS OF REGULATION

Solely to instance the efficiency of this method of approach, and without wishing to present any specific details—it would be possible to require the proper valuation of properties issued for stock, though permitting the issuance of stock without par value; to require a promoters' statement to be filed and published stating all the material facts entering into the promo-

tion, including the amount necessary to carry out the professed object of the corporation; to prohibit any allotment without a complete subscription or underwriting; to require that if less than 90 per cent of the proceeds of any public offering of securities is received by the corporation, and the fact is not made known to intending purchasers, any resulting sale shall be void; to require a general stockholders' meeting, similar to the statutory meeting under the British Companies' Act, with power to rescind any action not disclosed, or based on facts not disclosed in the promoters' statement; in short, to see that the company is completely organized for an honest business—not simply for stock jobbing—before it has satisfied the conditions of its creation. Any such law should favor the honest promoter, recognizing, as Professor Mead expresses it, that he "performs an indispensable function in the community by discovering, formulating, and assembling the business propositions by whose development the wealth of society is increased."

THE PROPER BASIS FOR "BLUE SKY" LEGISLATION

It is impracticable in this article to discuss adequately the details of a proposed law.⁶ But a final word should be said as to the proper conception on

⁶The Taylor Bill, now in Congress, presents perhaps the most intelligently conceived plan of enforced publicity yet proposed. In substance, it requires a statement of information to be filed at Washington on any general offering of securities, and duplicates to be filed in a proper office in each territory covered by the offering. It also requires that any dealer or underwriter offering a company's securities must join in and guarantee the company's or promoter's statement of facts. This requirement tends to defeat its purpose by driving conservative dealers from

the field and removing the most responsible check to ill-advised flotations. If this feature of the bill were enacted, it might be safely predicted that its able author, counsel for the late Capital Issues Committee, would not, on full consideration, accept a partnership in the best investment house in the country, for the very simple reason that he would soon have hanging over him a contingent liability of at least one hundred times his capital. An investor can buy and hold his securities, assuming, as he does, his risks of loss, but a dealer selling many

which the law should rest. Let us first assume the formation and financing of a business or enterprise by three men, one supplying the opportunity, another the management, and a third the money. They deal with each other at arm's length and no one would suggest that a state official should intervene and revise their contract, or prohibit the enterprise because he did not think it would succeed, or because one was believed to be getting the best of the bargain. It might be said, in passing, that in this case it is usually the man with the money who dictates terms. Now this situation is altered, and radically altered, by a general solicitation or offering of securities, when the third party is the general public, or perhaps a portion of the public consisting of a carefully selected list of inexperienced and gullible investors, and when all the facilities of corporate chicanery may be used to rob them of their earnings. All agree that the state can and should take an interest in protecting this situation. Academically, at least, all agree that the corporate facilities should be safeguarded against the dangers it presents. All agree that the prospective purchasers should have all the facts which the moneyed man in the first instance gets for himself; that the solicited investor

should not be permitted to "buy blindly," even if he is willing to do so. But should we go further? Should the state administrator say, "This is an unsound venture; it will 'work a fraud' on this class of investors to permit them to be solicited on such an offering; finance it privately, if you can, but you cannot finance it by a general solicitation or offering?" In the answer to this question lies the fundamental divergence of opinion among the advocates of "blue sky" legislation.

The British and Canadian acts register the answers of those governments, given after a study of the subject, which in its comprehensive thoroughness has not been remotely approached in this country. The writer, for one, is inclined to accept this viewpoint and to reject the suggestion of so drastic and impracticable an executive power, at least until the conditions on which all are agreed are met; until, first, the creation and promotion of corporations have been safeguarded at their source, and second, adequate provision has been made to give the prospective purchaser of securities the information which he needs in order to exercise his own judgment and his own freedom in investing his own money in securities. The peculiar facilities to fraud must be removed; only when that is done are

times his capital cannot assume the risks of loss on all he sells, unless he charges a heavy insurance premium. He should, and does, of course, assume responsibility for his own care in investigating the security and in recommending it to his customers. In the discussion on the bill some question has been raised as to the power of Congress over corporations having "power to engage in interstate commerce," as distinguished from corporations actually engaged in interstate commerce. Certainly, if Congress is to prevent the evil contemplated, it should not have to let

the corporation first issue its stock and then engage in interstate commerce. Logically and constitutionally it should prohibit the organization of any corporation or association having power to engage in commerce "unless, in the charter or articles of association or laws governing the same," the prescribed necessary conditions and safeguards against evil are provided. For the prevention of fire, it may be necessary to forbid throwing of lighted matches in waste baskets.

we in a position to consider the need of a further remedy to protect the investor whose judgment and will are too weak to enable him to protect himself. A general law regulating necessary business transactions cannot be based on the assumption of incompetence of persons legally competent to manage their affairs.⁷

Note.—As early as 1895 a departmental committee of the British Board of Trade investigated this subject and reported *inter alia* as follows: "Your committee may observe that they have

dismissed from their consideration every suggestion for a public inquiry by the registrar or other official authority, into the soundness, good faith, and prospects of the undertaking at this or any other stage of the company's formation. To make any such investigation into the position of any new company complete or effectual would demand a very numerous staff of trained officers, and lead to a great delay and expense, while an incomplete or perfunctory investigation would be worse than none. It would be an attempt to throw what ought to be the responsibility of the individual on the shoulders of the State, and would give a fictitious and unreal security to the investor, and might also lead to grave abuses."

⁷ The real point involved in the idea of administrative prohibition lies in the understanding of what is to be prohibited. The original Kansas conception, still adhered to by many intelligent state officials, is that the examining board should prohibit an offering which seems to be unsound or unlikely to succeed, or where it considers the promoter's profit too great or "extortionate." A different view was expressed by former Corporation Commissioner Watson, of Oregon, in 1914, who wrote that he had "attempted to do two things—to stop fraudulent transactions and the sale of stocks through misrepresentations first, and secondly, to require that wherever a security of a speculative nature was sold the seller present the matter honestly and fairly to the intending purchaser." He was of course operating under a regulative law. He later urged the fraud provision now found in the West Virginia Act, recognizing that fraud should be penalized, not simply reprovved or "stopped," by executive order. It has recently been proposed in connection with the Taylor Bill to authorize the Federal Trade Commission to "issue an order against anyone who had come under suspicion by attempting fraud or deception, which order would act as a prohibition against their doing business until they had shown to the satisfaction of the commission that their offerings were meritorious." This is a very practical viewpoint, very generally expressed. Is it politically sound? Given a statute punishing the first overt act in any scheme to defraud, and requiring advance notification of the fact

and character of any proposed offering, with power of official investigation (such was the proposed fraud act mentioned in Note 2), the promoter of "fraudulent and misrepresented securities," or one "who had come under suspicion by attempting fraud or deception," would find his promotion cognizable by the prosecuting attorney, and not simply by an administrative official, who upon showing that his offering was "meritorious," might license his further attempt at "fraud or deception." The objection to this governmental conception is that it shifts the responsibility for the prevention of crime to an administrative board, which by its inaction, by confidence in or friendship for individuals, by political influence, or by the always increasing accumulation of work, permits and invites the thing intended to be prevented; there is no prohibition, law or penalty until it is created by an executive fiat in the particular case. The potential criminal is safe until he is detected and then he is, or might be, told to be good. Despite the fascination of this idea for many minds and particularly for the practical man of business, who, being honest, has nothing to fear from it, its political unwisdom must be recognized by students of constitutional government. It is in a sense a continuing invitation to criminal effort, an effort to "get by" and to "put it across" before the official body wakes up; an effort, which, if successful, goes unpunished; if unsuccessful, is punished by an executive order to desist from a further flotation of securities.

The History of Bond Prices

By HERMANN F. ARENS and JAMES R. BANCROFT

Of the Babson Institute

IN order to quote bond prices it is necessary that there be an organized bond market. Such a market has existed only within comparatively recent times. The London Stock Exchange originally confined its dealings to British government "stocks." The term "stock" is used in Great Britain in practically the same sense that the term "bond" is used in America. What we call stock they call shares. Later, other stocks were admitted and dealt in, first those of foreign governments and later the securities of railroads and other corporations.

The debt of Great Britain is mostly in the form of consols or consolidated annuities, and dates back to 1752 when existing obligations were consolidated into 3 per cent annuities without maturity. Properly speaking they are not bonds in the American sense. There is no promise of payment of a fixed amount of principal and hence no maturity. Instead, there is the promised payment of an annuity conceived of as interest upon an original principal.

The rate of interest fixed by act of Parliament in 1752 was 3 per cent. In the latter part of the eighteenth century 4 per cent and 5 per cent consols were issued. Later the rate of interest was reduced to $2\frac{1}{2}$ per cent. These consols were freely traded in on the London Stock Exchange, and for the purposes of this article will be treated as bonds. British consols have often been referred to as the "Primier

Security of the World." Certainly they are the security for which there has been for the longest time an organized market. Indeed, for some time they were the only securities for which an organized market existed at all.

BRITISH CONSOLS FROM 1752 TO 1813

From 1752 to 1813 the general trend of consols was downward. The wars with France, the American war, ending in disaster and the loss of the Thirteen Colonies, resulted in continued accumulation of debt. The amount of 3 per cents outstanding in 1752 was £8,200,000. Shortly after the American war the total capital sum of the 3 per cents was £107,400,000. During the Napoleonic wars the inflation was naturally tremendous. The prices rose and fell with the changes in the military and political situation.

TREND IN BRITISH CONSOLS FROM 1810 TO 1848

Chart No. 1 shows the course of British consols from 1810 to 1848 inclusive. This is the period following the Napoleonic wars. The shaded area shows the difference between the high and the low price for the year. From the low point in 1815 the rise was rapid until in 1823 consols sold on a 3.1 per cent basis. The general trend was still upward until the high point was reached in 1843 of 2.9 per cent. The business depression of 1818-20 is clearly shown, as is also a depression

in 1825, but the American panic of 1837 seems to have made no impression on British consols. The period covered by this chart was one of colonization and expansion. The steam engine had, indeed, been known before, but it was during this period that steam was utilized on a large scale to increase the efficiency of human labor. This was the period of railroad building and the beginnings of steam navigation. New areas of fertile country were opened up and settled in America, in Australia and New Zealand. Great Britain became a manufacturing and commercial power drawing on the whole world for raw material and selling back manufactured products. Hence, the growth of British wealth caught up, as it were, with the load of indebtedness, which otherwise would have been too heavy for safety. Since 1845 the general trend of consols has been downward.

TREND OF ENGLISH COMMODITY PRICES, 1791 TO 1825

Chart No. 2 shows the course of English commodity prices during and following the Napoleonic wars. It will be noticed that the falling commodity prices beginning in 1814 corresponds rather closely to the rising trend of consols. Prices reached their low point in 1822 and bonds their high in 1823. The connection between the price movements of bonds and commodities will be discussed when the causes of fluctuation in bond values are considered.

UNITED STATES GOVERNMENT BONDS AFTER THE CIVIL WAR

United States government bonds came to occupy an important position as investment securities only during

and following the Civil War. Chart No. 3 shows the course of United States bonds during and following the Civil War. It will be noticed that United States bonds have sold on a much lower yield basis than consols. This is accounted for by the privilege of note issue, under the National Bank Act, which went with the American bonds, and for which there is no counterpart in the case of British consols. The depression of 1873 apparently did not affect American bonds, but they did suffer a drop during the period 1876-79.

The effect of the panic of 1893 is clearly in evidence as are also the years of prosperity from 1886 to 1890. The right of note issue, however, takes these bonds out of the strictly investment class and makes any comparison with other bonds unfair and misleading.

RAILROAD BONDS

Railroad bonds came into the investment field with the building of the great railroad systems which began about 1830. The New York Stock Exchange was established in 1800, and incorporated in 1816 and constitutes by far the chief market for American bonds and stocks. Up to, and directly following, the panic of 1837 railway bonds, as well as shares, constituted a medium of speculation rather than investment. It was quite usual to issue bonds to the full amount of capital actually required for construction and then to issue stock as a bonus given away with the bonds. Fluctuations in railway bonds under such conditions are rather a barometer of speculation than investment. The case of the Union Pacific is the classical exam-

ple of this type of financing. The land was granted by the government and the construction money raised almost entirely by bonds.

INVESTMENT BONDS BEFORE 1860

The bonds which were in demand as investments previous to 1860 were chiefly state, county and municipal obligations, and in the panic of 1837-39 a number of defalcations occurred, which hurt the credit of Americans generally, in Europe. Encouraged by the expansion of industry which had been evident during the first half of the century, many states, particularly in the North, borrowed money to invest in internal improvements, while southern and western states borrowed to engage in banking schemes and commercial enterprises. Mississippi and Florida repudiated, and there was a suspension of interest payments in some other states.

BOND PRICES SINCE 1862

Continuous and reliable quotations on investment bonds during these years are not available. Chart No. 4 shows the course of bond prices as measured in dollars and as measured in commodities since 1862. Of course it is impossible to find any bonds running fifty years but by a process of piecing together bonds of like character and yield the result was obtained as shown in the chart. Chart No. 6 was made by taking the chart of bond interest and the trend line, as compiled and published by the Harvard Committee on Economic Research in the *Review of Economic Statistics*, bringing it up to date and plotting across the chart the fluctuations in commodity prices as shown by Bradstreet's Index.

CAUSES FOR FLUCTUATION IN BOND PRICES AFTER THE CIVIL WAR

In considering the course of bond prices in and immediately after the Civil War, two factors must be kept in mind. First, United States currency was greatly depreciated—a factor that has not been present since. Second, bonds in that period were much more speculative in character than now, owing to the newness and relative development of the country. Both these factors conspired to place bond prices on an extraordinarily low level. This must be taken into consideration when the chart showing the trend of bond prices at that time is studied. Putting aside the question of depreciated currency, the position of sound bonds in the period 1865-72 was quite analogous to that now prevailing. Commodity prices were extraordinarily high, general post-war inflation prevailed, and the purchasing power of money was at a low ebb. The pendulum had swung to an extreme just opposite to the factor prevailing twenty or twenty-five years before. The best bonds could have been purchased, to yield from 7 to 9 per cent. Many arguments were advanced that, as the war had destroyed so much wealth, we had definitely entered a period of high interest rates. The advance in commodity prices while directly caused by the war was also laid at the door of the gold discoveries of 1849, which had of themselves caused a considerable decline in the value of gold. High prices caused industrial expansion and, with minor interruptions, extravagance continued until the bubble burst in the terrific financial collapse of 1873. Bond prices reached an extreme low level about a year after the close of the

war, but as the return given on investments varies inversely with purchasing power of money no consistent improvement in prices was seen during the inflationary period. After the financial crash of 1873 the entire country entered upon a period of business stagnation and depression. Prices fell rapidly and interest rates were materially lower. Coincident with these developments came a consistent and material improvement in bond prices.

An interesting point here is to note the difference between panic and depression, and to note the action of bonds and speculative securities under such conditions. Reference should be made to the chart (No. 5) covering the period 1872-79. A panic or crisis is caused by fear following realization of unsound conditions. Under the stress of fear everything is sacrificed. Values count for little. A panic or crisis may or may not be followed by a period of depression, depending on the conditions prevailing. A depression is not sudden but long drawn out. In it business is stagnant, and as a result competition brings falling prices and also lack of demand for money. In other words, there results a sharp increase in the purchasing power of the dollar.

The crisis of 1873 was followed by one of the severest and most extended depressions this country has ever experienced. Money was withdrawn from speculative enterprises as quickly as possible, and safe and sound investments were sought. As a result, while speculative securities were declining, on account of falling earning power, solid investment issues were advancing. This advance continued with only minor interruptions until

1897-1900. While the country was in a so-called prosperity era in the year 1880 prices of goods showed little tendency to advance and the depression of 1893-98 found commodity prices and business conditions at the extreme opposite from that existing in 1865-70. The purchasing power of the dollar was very large. Prices of bonds had then advanced to a level where the return in many cases was less than 4 per cent as compared to 7-9 per cent after the Civil War. Much was said and written to prove that the United States was to be the reservoir of capital for the world, and that money was to remain very cheap. The demand for investment securities was tremendous. Railroads, like the Northern Pacific, New York Central, Norfolk & Western, Kansas City Southern, many of them recently reorganized on account of small earning power, were able to issue long time bonds on a $3\frac{1}{2}$ per cent basis. The New York Central $3\frac{1}{2}$'s of 1897 were eagerly sought early in the 1900's at 10 points premium, or on a 3 per cent basis. One railroad, offered the opportunity to sell 100 year bonds on a $3\frac{1}{2}$ per cent basis, would not do so and issued twenty-five-year bonds instead because, looking back, it was felt that twenty-five years hence they could refinance on a 3 per cent basis. This was the heyday for the corporation and the day of the source of future difficulty for the investor.

With the opening of the twentieth century came the large industrial combinations and the opening of a new era for the United States. For the past twenty years we have seen constantly advancing commodity prices culminating in the rapid advance of the past

three years. Similarly, since the early 1900's the prices of investment securities have shown an almost constant decline culminating in extreme weakness since we entered the European War. Savings bank bonds, the issues that sold on less than a $3\frac{1}{2}$ per cent basis twenty years ago, now yield nearly $5\frac{1}{2}$ per cent. The Kansas City Southern First 3's yield over 6 per cent. The post-war inflation and heavy selling for tax purposes brought

prices to their lowest point in December, 1919. The average man sees present conditions only once. Civil War veterans will remember investment opportunities like the present but they have little interest in them. Many of us remember the days of 3 and $3\frac{1}{2}$ per cent returns. Here we are at the other extreme of the pendulum. The situation calls for restricted spending and expanded investment.

CHART No. 1

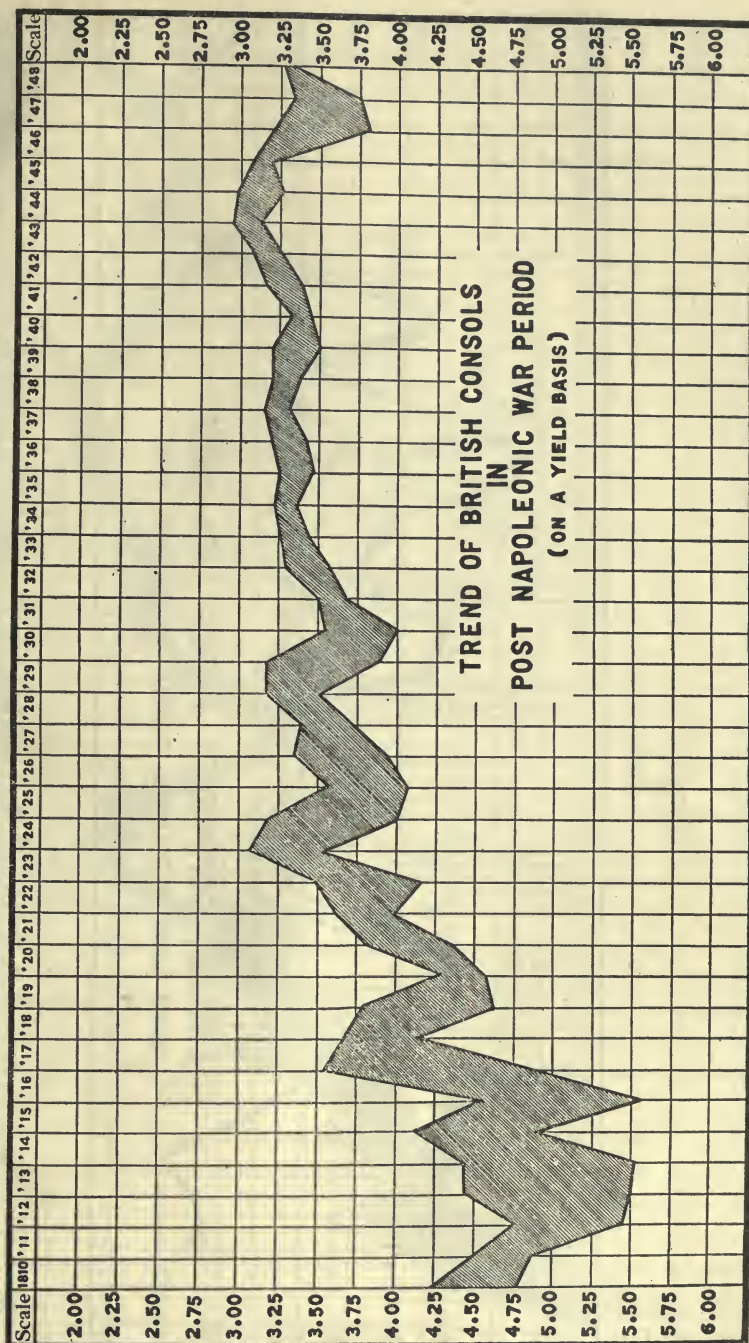


CHART No. 2

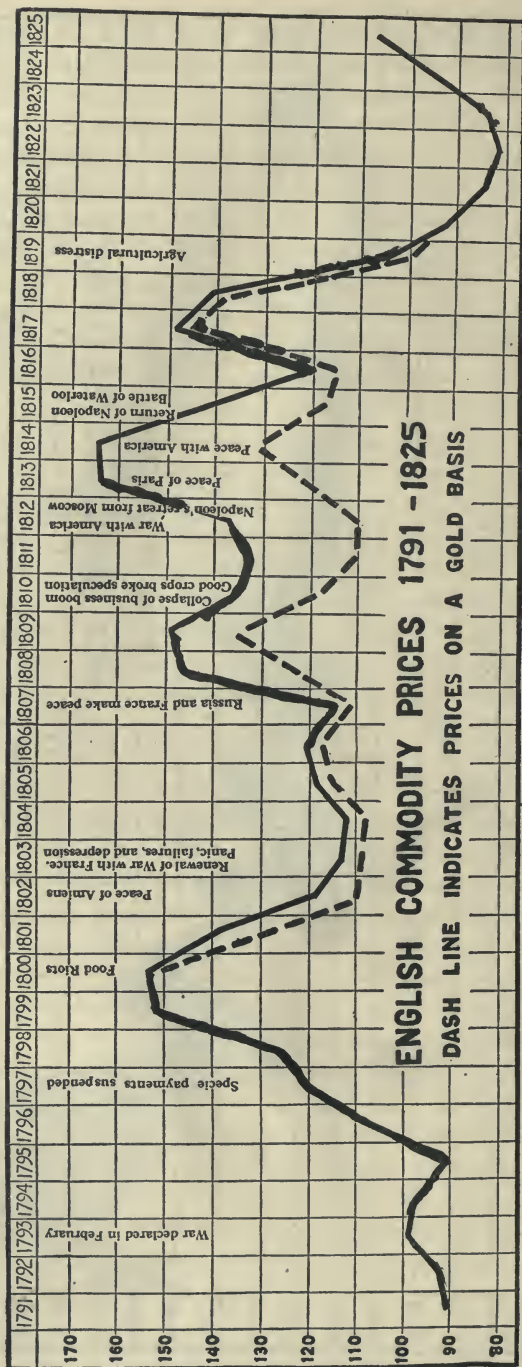


CHART No. 3

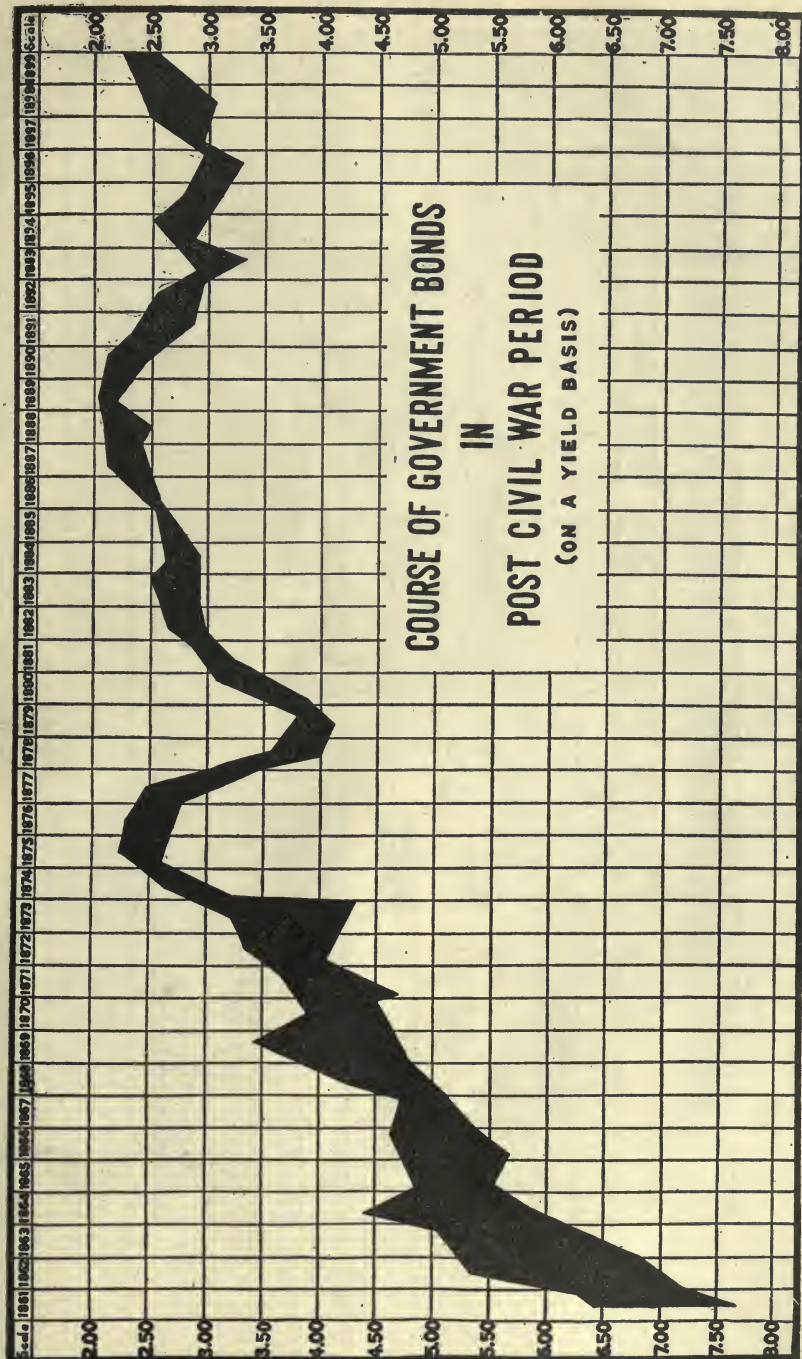
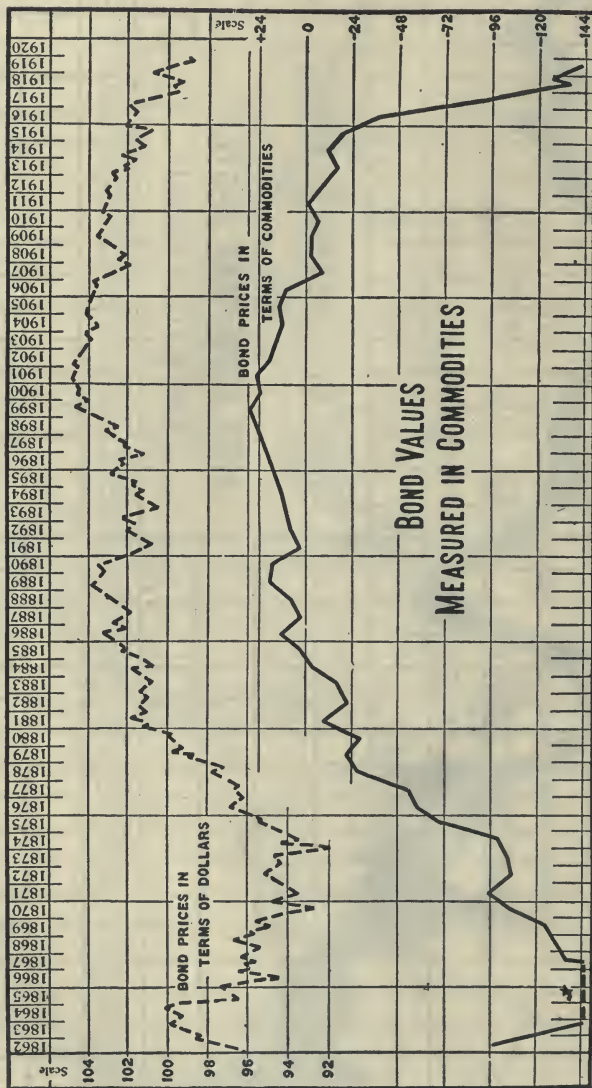
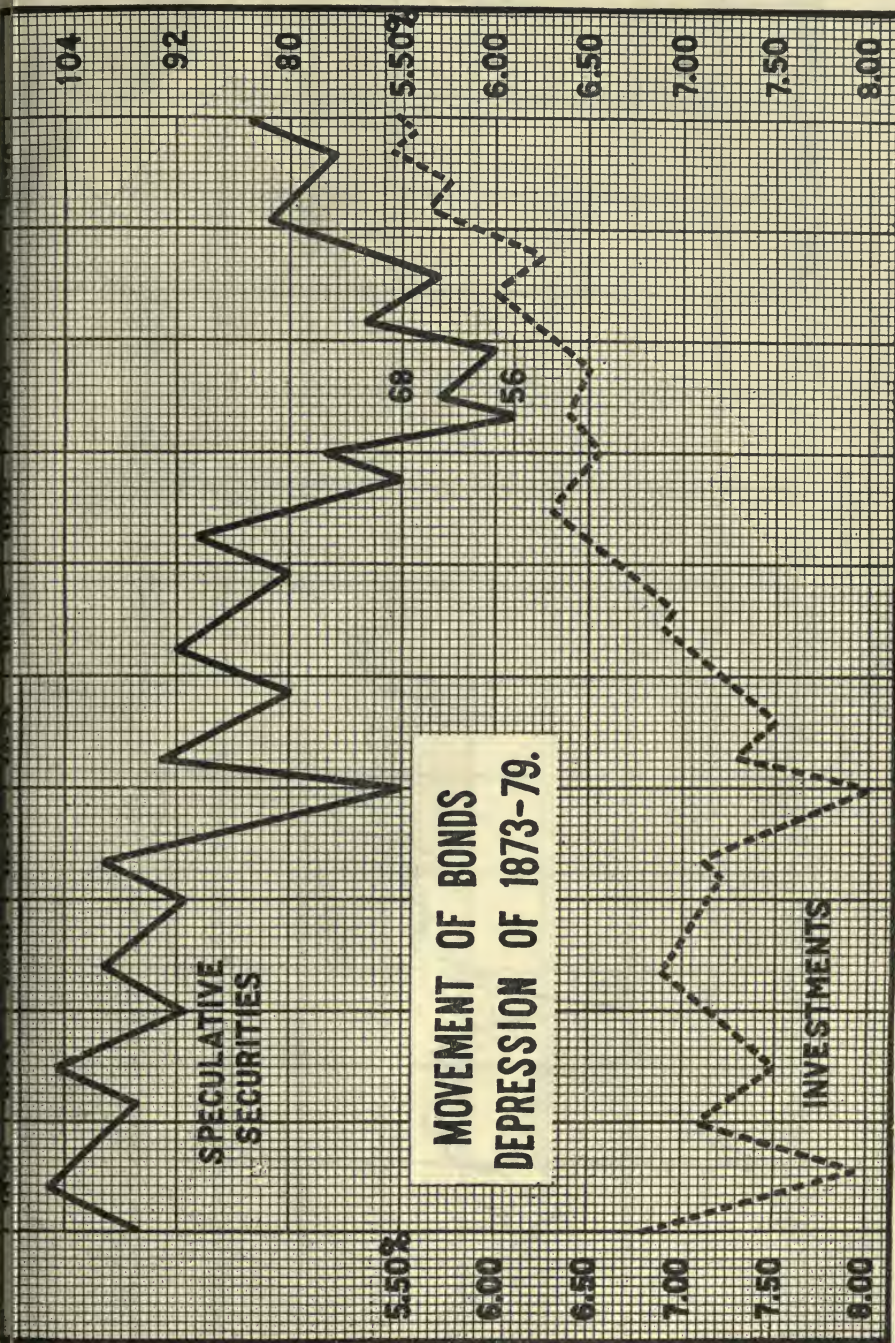


CHART No. 4



★ Prices dropped to -260 in 1866, due principally to depression in the value of paper money. In order to reduce bond prices in dollars to a basis of commodity prices, we assumed zero to represent a point where the average yield of the bonds was 4 % and the commodity index 100 %. We then determined the variance of both bond yields and commodity prices from this basis. Plotting the sum of these variances for each date we obtained the curve indicated by the dotted line above.

CHART No. 5



The securities used in determining the investment line above were Central Pacific 1st 6's, 1898; Chic. & Milwaukee 1st 7's, 1903; C. & N. W. Cons. 7's, 1915; Lake Shore 1st 7's, 1900; Mich. Cent. Cons. 7's, 1902; Ohio & Mis. Cons. 7's, 1898; Ft. Wayne & Ohio 1st 7's, 1912; St. Louis & Iron Mt. 1st 7's, 1892; Union Pac. 1st 6's, 1899; Morris & Essex 1st 7's, 1912.

CHART No. 6

--- = BOND YIELD. ---- = TREND LINE

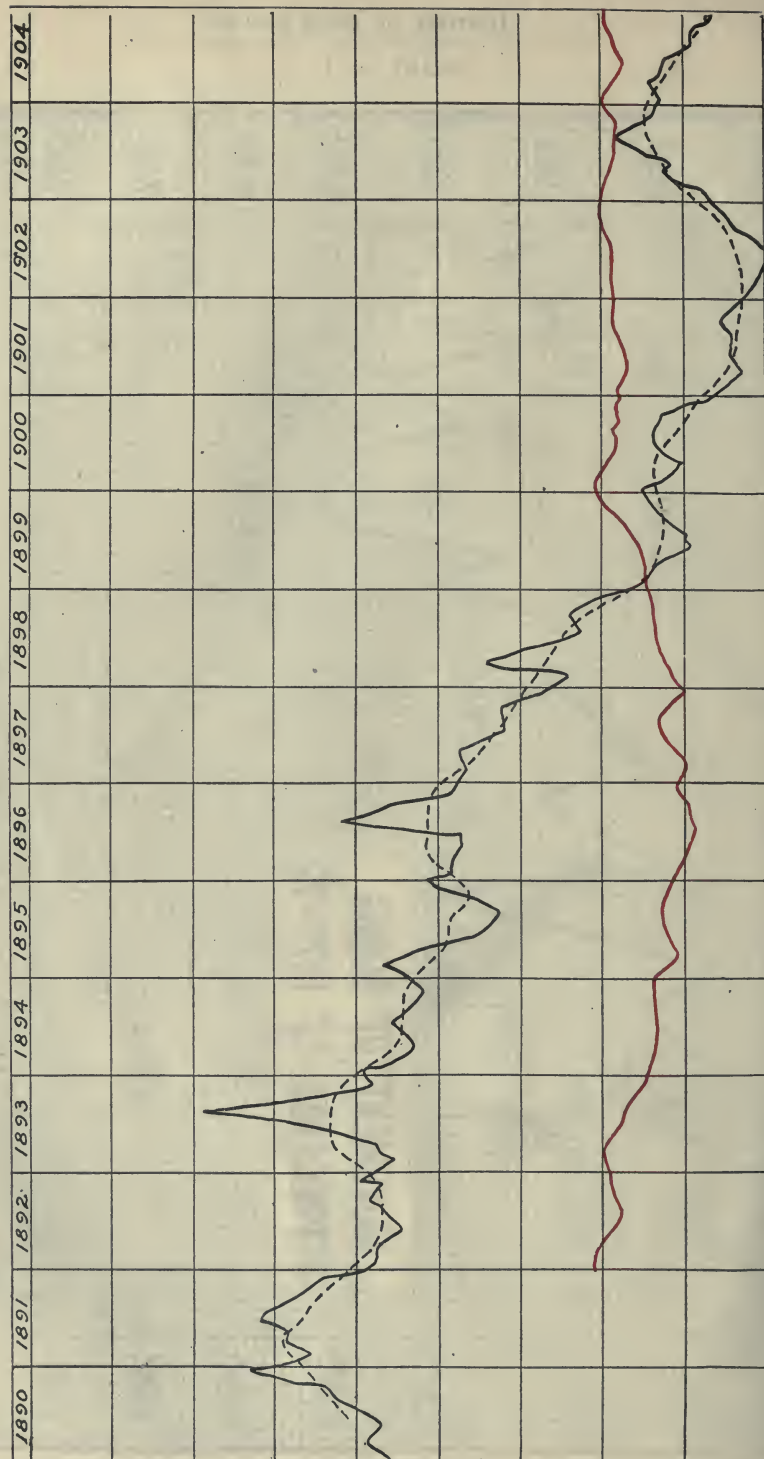
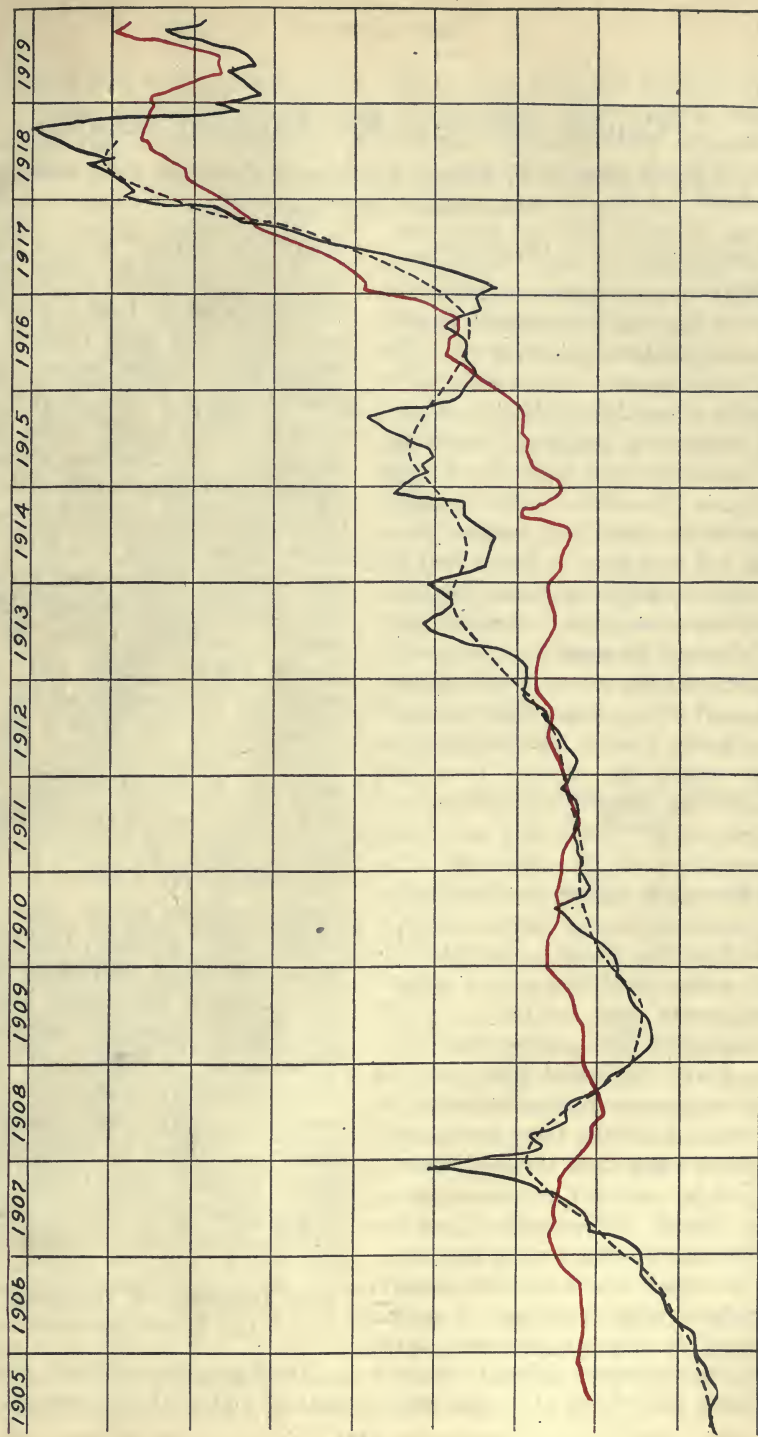


CHART No. 6
BRADSTREET'S INDEX OF ALL COMMODITIES



Causes Affecting the Value of Bonds

By HERMANN F. ARENS, PH.D. and JAMES R. BANCROFT

Of the Babson Institute, Boston, Mass.

SPECULATION AND INVESTMENT

TWO classes of persons are interested in the price fluctuations of securities—speculators and investors. The speculator is one who assumes the risks of ownership with the purpose and intention of profiting by a change in the capital value, while the investor purchases securities or other property in order to obtain an income therefrom. If one buys a house and lot in order to obtain an income by renting the premises, then he is an investor. If, however, he purchases because of a belief that the property will advance in value within a reasonable time, he is speculating, that is, he is looking for *profit* which he expects to obtain through the enhanced capital value of the property. The buying and selling of securities with the object of profiting through a change in value (either up or down) is speculation, entirely apart from the question of whether the operator buys outright or on a margin. Investments may be foolish or ill-advised, but if the ownership is assumed with the belief that they will yield continuous income and with the intention of holding them for the sake of the income then the purchaser is properly an investor, not a speculator, even though the security is not entirely paid for at the time of purchase.

The speculator, to be sure, usually, though not always, operates in stocks, yet, even in that case experience shows that the movements of bond prices are of value in judging the price move-

ments in stocks. Since, however, bonds are primarily an investment proposition rather than a medium for speculation, the chief interest in the movements of bond prices will naturally be found in the camp of investors rather than in that of the speculative group. If, therefore, we are considering the causes which affect bond prices, it is best to distinguish between those causes which affect the prices over a period of time and those, perhaps more obvious causes, which operate to influence prices during a shorter period. Since both sets of causes are in operation all the time it is not possible to draw a hard and fast line between what we shall consider the *short* and the *long* period. In a general way we can say that if we wish to know how bond prices will move during the next few months we should consider chiefly those causes which most strongly influence the immediate trend, bearing in mind as a background the causes which are operating to determine secular trend. Whereas, if we want to know how bond prices may be expected to move over the next five years, the long-time causes are those to which we must assign primary importance, modified at any time by the factors which exercise a more immediate influence.

THE DIFFERENCE BETWEEN BONDS AND OTHER SECURITIES

To distinguish between these two sets of factors it is necessary to con-

ceive clearly just what a bond is and how it differs from other classes of securities. The essential point about a bond is that it is a promise to pay a specified number of monetary units—dollars, pounds, marks, francs, etc. In this respect a bond differs fundamentally from a stock which represents a share in the prospects and profits of a going business. When you buy a share of stock you become, to that extent, a partner and part owner in an equity and thereby assume the risks of the business enterprise. A share of stock contains no promise to repay the purchase price, and, indeed, it contains no promise of re-payment whatever; but the owner holds the property-right in the physical plant, equipment and “good-will” of a business enterprise. By buying this certificate, the purchaser is virtually speculating on the success of the enterprise; by selling it “short,” the seller speculates that the future earning power of the business will be less than it appears to be at the time of sale.

It is true, to some degree, that the value of a bond depends upon the success of the company which issues it, but the bond is a lien upon the assets and earnings prior to the stock, hence, the whole equity of the shareholders acts as a buffer to take the shocks before the bondholders are called upon to sustain any part of loss or diminished earning power. Since, in the case of a bond, liquidation is contemplated at maturity, the bondholder is interested only in the prospects of the business up to the time of payment of the bond. It follows, then, that if a bond has proper security behind it, that is, if it is protected

by a strong equity in assets and earnings over and above what is required for the payment of the interest and principal of the bond, the bondholder need concern himself very little with the actual ups and downs of the business itself. For the purposes of this discussion attention will be confined to bonds of sufficiently high grade so that the element of business risk may be neglected except as the cycles of prosperity and depression may be found to influence the minds of investors, causing a rise and fall in general confidence.

A bond differs from a note only in the time which it has to run before maturity. Ordinarily, any promise to pay, having five years or less to run, is termed a note and hence is little influenced by the causes which lie back of what we may call the secular trend of bonds.

FACTORS IMMEDIATELY AFFECTING BOND PRICES

Current Interest Rate.—The factor of most immediate influence in bond values is the current interest rate. When the rate to be obtained on call loans or on short-time paper—three to nine months—rises, the possession of a bond paying a fixed rate of return becomes less desirable and, conversely, when the current interest rate falls the possession of the bond becomes thereby more desirable. It is not quite true that the value of a bond is the capitalized value, at the current rate, of the amount of its yield. The current interest rate may rise very sharply, but if this high rate is believed to be only temporary in its nature the price of bonds will not be severely affected.

Prices of Railroad and Industrial Stocks.—Two other influences that have an immediate affect on the value of bonds during comparatively short periods of time are the earnings of railroad and industrial stocks and the prices of stocks. These two factors are closely related, but not identical. As a period of prosperity reaches its zenith, the earnings of business enterprises are large and investors are tempted to sell their bonds and try to obtain higher returns by buying into the enterprises that show high earnings. Of course, the exhibition of large earnings furnishes the reason for the high price of the stocks, and to that extent these two factors are but two ways of stating the same phenomenon. But besides this, though related to it, is the upward movement of stock prices caused by the fever of speculation that always marks the culmination of a period of prosperity. People are hypnotized and carried off their feet by the profits which are being made through the appreciation in value of stocks, and many, whose funds would normally seek more conservative investment, yield to the temptation to speculate rather than invest, and they buy stocks, not primarily to secure a higher yield, but chiefly in the hope of profiting by anticipated appreciation. The demand for bonds is thereby lessened.

Emergency Prices During Periods of Depression.—A fourth influence of a temporary character should be noticed. An examination of Chart No. 6, in the preceding article, will show a sharp rise in the yield—corresponding to a fall in price—of bonds in times of financial panic. Note the abrupt movements in August 1893 and No-

vember 1907 and again, to a lesser extent, in 1913. In times of financial panic the need for ready cash is urgent, and, regardless of long-time values, bonds as well as all other securities are sacrificed by their owners to raise cash without which they face business failure. - Such occasions offer golden opportunities to those who are strong in ready cash, but the opportunity is of short duration only, and bonds are first to recover as soon as the liquidation is over and the emergency passed.

FACTORS AFFECTING BOND PRICES OVER A PERIOD OF TIME

Changes in the Commodity Price Level

If it is true that the prices of bonds vary inversely with the rate of interest paid for short-time money, this can only mean that there are other and deeper causes which affect the secular trend of interest rates and bond prices alike. The first of these factors which we shall consider is the effect of changes in the commodity price level.

Money is defined as a standard of value, a medium of exchange and a medium through which value can be easily and safely stored up against a future need. A bond, we have previously observed, is a promise to pay a certain number of units of money. If the promise is considered practically certain of fulfillment, then the bond partakes of one of the primary characteristics of money. Entirely apart from the question of interest, the bond is a medium through the purchase and holding of which value may be safely stored against the future requirement. Since the bond is a promise to pay money, the purchase of a bond involves the yielding up of present value, that is, the power of command over present

economic goods—commodities and services—in exchange for a similar command over future goods. A question, therefore, arises. “If I part with the value in purchasing power represented by \$1,000 today in return for \$1,000 ten years hence, just what will \$1,000 represent in purchasing power ten years hence?” It is a plain and painful fact that the person who sold a miscellaneous bill of goods for \$1,000 in 1914 and purchased a bond bearing 5 per cent interest would not be able with the proceeds plus interest of the bond, should it mature today, to come anywhere near repurchasing the same bill of goods. He would, indeed, receive \$1,000 principal plus \$250 in interest making \$1,250 in all; but it would take about \$2,000 to command in exchange the same representative list of commodities.

Since sane people do not desire money for the mere pleasure of handling coins and bills, but because of the command it gives over the services of men and things, it follows that if the purchaser of a bond expects the dollars he is now yielding up to purchase less in the future he will pay fewer present dollars for a given number of future dollars, entirely apart from any question of the security involved.

It would not be fair to deduce directly from this, however, that in periods of rising prices bonds must fall *pari passu* with the rise in commodity prices. The change is brought about rather through the effect produced on the minds of investors by what they see going on about them. If prices have shown a somewhat falling tendency for a number of years, as was the case in 1900, the investor easily

falls into the way of assuming that the same tendency will continue in the future that he has observed in the past. The great majority of people are powerfully influenced in their judgments of the future by what they have observed in the comparatively recent past. Logically, it may be a delusion to argue that because the sun has risen in the east in the past that it will, therefore, continue to do so in the future, but it is a delusion very hard for the human mind to resist. For such a deduction to be logically justified we should investigate the causes of the sun's past behavior and observe whether or not the same causes are still in operation and whether they may reasonably be expected to operate tomorrow. In the case of the movement of commodity prices we should investigate the cause of the movement that has been observed and try to discover whether or not the same causes may be expected to operate in the future with the same force as in the past. There is a tendency to say that, since prices have been rising for some years, there is danger of a future rise and the intelligent investor is inclined to protect himself against a possible continuation of this observed trend.

It is commonly said that business is done on the basis of an assumed stability in value of the dollar. This is doubtless true as regards short-time contracts. It also holds for long-time contracts except where some noticeable change in value has put the investor on his guard. It follows from this that the past trend in commodity prices affects bond prices through its effect on the expected future value of the monetary unit. If bond buyers

generally were of the opinion that the trend of commodity prices during the next ten years would be downward, it would be immediately evident that at the present time, December, 1919, safe bonds were almost ridiculously cheap, for not only is the price at a level which nets a high yield in dollars, but if the purchasing power of the dollar is to increase, then a thousand dollars some years from now will actually be worth much more than \$1,000 now, and the bond, if secure, will return, besides interest, dollars of greater value than those which must be given up for it now.

If, on the other hand, we expect the present level of prices to continue no such advantage would accrue from purchasing future dollars by the sacrifice of present dollars. Since it is difficult, when a price level has once been established in the public mind, for the mind to picture vividly a radical alteration of this price level, we find that most men—most business men and investors—are now assuming that the present scale of prices will continue with little alteration. What is the ground for such an assumption? The reason usually advanced is that the great increase in the use of credit instruments will continue resulting in a permanently increased per capita circulation of money and credit.

If the present inflated conditions of credit could continue indefinitely then it is probably true that the general level of prices might also remain high. But the continuance of these credit conditions in Europe is possible only if the late belligerents are able to meet the interest charges and remain solvent. Otherwise their credit structure will collapse and such a collapse cannot

occur without having a profound effect in the United States. A debacle in Europe must necessarily involve not only the repudiation of the war debts but also the destruction of popular confidence in credit instruments of all kinds including the paper money, which, with the war bonds, constituted the principle means of inflation. When transactions are brought down to a hard cash basis it is obvious that the scale of prices must suffer drastic reduction.

It is not, however, the future course of prices but rather the trend of prices in the recent past that influences the minds of most investors. Hence, so long as prices continue to show a rising trend, and for some time after, their influence may be expected to make for lower bond prices.

The Possibility of Spending

Expenditures for Consumption Goods.

—Another factor that functions in the determination of bond prices is the possibility of spending. It is said that the interest rate in Holland in the seventeenth century was as low as 3 per cent. Doubtless several causes worked together to produce this result, but it is only reasonable to believe that one of these causes was the paucity of objects of expenditure. There were no railroads to make travel easy and pleasant. Sea voyages were long, tiresome and dangerous. There were no automobiles or "movies" upon which to spend one's money. When you receive a certain amount of income you are placed in a position to choose the objects upon which that income may be expended. You may elect to spend it for articles of immediate consumption or you may decide to

invest it. Investment usually takes the form of purchase of stocks or bonds. Hence the objects of possible expenditure compete with bonds for your money. The following table shows the increase in the production of pleasure automobiles since 1899. It has been impossible to show by figures the growth in the moving picture business and sales of graphophones but the fact is a matter of common knowledge. The increased use of these luxuries has been particularly marked since 1900.

Passenger Automobile Production in the United States

Wholesale Value

1899.....	\$4,750,000
1904.....	23,634,367
1909.....	159,918,506
1910.....	213,000,000
1911.....	240,770,000
1912.....	335,000,000
1913.....	399,902,000
1914.....	413,859,379
1915.....	565,978,950
1916.....	797,469,353
1917.....	1,053,505,781
1918.....	801,937,925

Add 20 per cent for retail value.

If these objects of expenditure did not exist there would evidently be more funds seeking investment. That the standard of living has risen markedly during the past twenty years is evident to all. Electric lights have come into general use in homes, heating systems have supplanted the old-fashioned stove, and high-priced clothing has become common to all classes. The prevailing standard of living comprises those consumers' goods which people feel that they must have before they can save, hence, other things being equal, a higher standard of living is an influence unfavorable to

investments, and, therefore, depressive to the price of bonds.

Distribution of Income

The question of the standard of living is closely bound up with the distribution of the social income. A comparatively even distribution of a given social income leads to a higher general standard of living, and hence tends to depress the value of bonds. If wages are low and profits large, the wage earners can purchase a relatively small quantity of consumable goods, while the receiver of profits having a large surplus, will increase his consumption only to a comparatively small extent. The surplus seeks investment. If, on the other hand, wages are increased at the expense of profits, this surplus, formerly available for investment, is distributed among a large number of people whose immediate wants are not satiated, and who, therefore, in most cases, will spend their increased incomes in achieving a higher scale of consumption, rather than in buying bonds. Hence, an increase in the share in distribution which labor receives, however desirable it may be considered from any other standpoint, is nevertheless unfavorable to the process of saving and investment. It results in an enlarged demand for consumers' goods and at the same time a relative curtailment in the supply of capital wherewith to produce them. The effect, of course, is to raise the current interest rate and depress bond prices.

The Productivity of Labor

Introduction of Labor-Saving Devices.

—Since the demand for bonds depends upon the surplus production

available for investment, it is evident that any event which serves to increase the productivity of labor must result in increasing the surplus wealth which, if it remains in the hands of the business enterprisers, will certainly seek employment in productive enterprise. The productivity of labor may be increased to a very great extent by the introduction of labor-saving inventions, by virtue of which a greater volume of goods is produced by the same amount of labor that was formerly necessary to produce a lesser quantity. The number of such inventions during the last century and a half has been almost beyond counting; the most important being those involving the application of power to technical processes which were formerly performed by hand. Such, for example, is the application of steam power to the manufacture of almost everything that two centuries ago was made by the individual artisan with the aid of hand tools or simple foot-driven machines. Of such character have been the machine reaper, seeders, threshers and the other appliances which, within the last seventy-five years, have revolutionized farming methods. The importance of these inventions lies, not in the fact that they increase the per-acre yield of the soil, but rather that they enable one man to cultivate more acres, thus cheapening the food supply by reducing the labor cost. Under any and all circumstances the providing of food is of fundamental importance and it is only labor that is not needed for this purpose that can be used for the production of other things, including capital goods *i.e.*, tools, machinery, factory and office buildings, railroads,

steamships, etc. Hence, the introduction of machinery into agriculture, increasing the productivity of agricultural labor, is of prime importance in releasing labor for employment in increasing capital and the supply of other consumable goods.

It should be noted, however, that the effect of increased productivity of labor has another and compensating effect, since it not only supplies increased incomes to seek investment, but it also releases labor from the employments in which it has been rendered more efficient to engage in new lines of production hitherto unprofitable or in the manufacture of capital goods which serve to increase still further the efficiency of labor. But in the process of employing the labor thus released new financing is required. Thus the supply of bonds offered is increased at the same time that the amount of wealth in the hands of prospective bond buyers is increased. The net effect will depend upon the extent to which those who come into possession of the enlarged incomes utilize them in the purchase of directly consumable goods or invest them in producers' goods *i.e.*, capital to be used for further production. If the savings effected by the labor-saving devices remained as profits in the hands of the business enterprisers, it would tend to increase the funds seeking investment, but if the savings are distributed among the wage earning class the tendency will be, as we have noted above, to increase the demand for consumers' goods and thus, in effect, expand consumption to keep pace with the increased productivity of labor, leaving little surplus for the increase of capital.

If the productivity of labor is increased through the lengthening of the working day there will be brought into existence a certain amount of additional product. The question of distribution, as in the case above, then becomes of paramount importance in relation to the effect on bond prices. If the greater part of this surplus goes to the laboring class in the form of overtime pay it will tend to be spent for consumers' goods and put demands on capital instead of supplying it.

Increased Industrial Efficiency.—

When the efficiency of labor is increased through the perfection of industrial organization the resulting surplus inures directly to the advantage of the class of business enterprisers and hence seeks investment in productive enterprise. This phenomenon was plainly in evidence from 1898 to 1903. This was the period of the formation of the so-called "trusts," or gigantic combinations of capital. These combinations had two objects, namely, to realize internal economies by reducing overhead expenses and eliminating cross shipments, and to create conditions approaching monopoly control by reason of which the price of the goods might be raised to the public. In so far as the first object was attained an increased profit was realized through the well-known economies of large scale production. These increased profits sought investment, and, since a considerable portion of available funds naturally seeks investment in bonds, we find bond prices high in this period. In so far as the second object succeeds, the effect is a virtual lowering of real wages through the advance in

prices, the increased profit remaining, of course, in the hands of the investing class. Although the price-raising operations of the "trusts" are doubtless real, they often attract a disproportionate share of public attention, owing to the spectacular character of the great combinations that attempt them, and it is very probable that the actual increase in price affected, in such cases, is much less than is commonly supposed. In fact, cases may be found in which the great combine actually finds it profitable to lower prices instead of raising them. Such a statement does not appeal to the popular imagination, to be sure, yet it must be remembered that few would-be monopolies are complete, and that, even when the control over price seems absolute, a check is, in most cases, present in the form of a possible use of substitutes. It seems reasonably probable that the combining of the various oil companies in the Standard Oil Company resulted in an actual lowering of the price of oil, not only as compared with its previous figure, but as compared with what the price would have been had the business remained competitive. Certainly the breaking up of the old Standard Oil Company did not result in any lowering of price. A combine that cannot realize internal economies as the result of combination, but must realize increased profits entirely through its power of raising prices, is of very uncertain stability.

Social and Political Stability

An influence that cannot be overlooked in the discussion of bond prices is found in the conditions of

social and political stability which vary in any country from time to time. It will be recognized at once that the bonds of unstable governments are much harder to market and bring a lower price than bonds of stable governments; but, in truth, the matter goes much further than this. In a country known to be subject to revolutionary outbreaks and whose political future seems uncertain there is a greater element of risk, not only in government bonds but in the bonds of railroads or industrial enterprises as well. Investors demand a higher return if they are to loan their money where a political upheaval may destroy either the actual physical structures or the property rights which stand as security for the loans. The bonds of enterprises in Central and South America, excepting Chile, Brazil, and the Argentine, have always constituted obvious evidence of this fact.

It is by no means so well understood that the same principle applies in countries ordinarily thought of as politically stable. Political stability is a relative term. Many events may occur that affect political stability. War is the most feared by investors. When a nation goes to war its debt begins to expand by leaps and bounds. The mere quantity of new bonds offered would alone suffice to reduce the selling price of government issues, but if the war is a serious one in which national existence is threatened the risk of defeat is ever present and the bonds will rise and fall with the varying fortunes of the armies in the field. The course of British consols during the Napoleonic wars (See Chart No. 1 of the preceding article) is the classi-

cal example showing the fluctuations in bond prices due to the fortunes of war. The same story has been repeated in the case of the national bonds, consols or rentes of all the belligerent powers in the recent war.

Government and Industrial Securities.

—The above remarks regarding the effect of political conditions on the securities of national governments lead us naturally to inquire as to the effect of political conditions upon the value of railroad or industrial bonds. Before taking up this question, however, it will be advisable to call attention to certain pertinent facts regarding government and industrial issues respectively, and to dispose of certain popular superstitions regarding government obligations.

Government Bonds.—Just what is a government bond? Clearly, it is a promise to pay a certain sum of money at a certain time in the future together with interest at a fixed rate until the time for payment arrives. If the obligation is in the form of a consol or rente then there is no maturity; instead there is merely a promise to pay a fixed sum each year *in perpetuum*. If we inquire as to the security behind the government obligation the answer is readily given, namely, that the government bond is supported first, by the credit of the government, and secondly, it has behind it as security the whole possessions of the people of the country. Thus the taxing power can and must be used in support of the bonds to whatever extent necessary. It is certainly true that the bond is supported by the credit of the government, but this is another way of saying that the bond depends for its value upon the con-

fidence and respect which the government commands. A government that is at peace, that has only a small debt, whose tax levies on its people are not grievous, and which expresses and satisfies the ideals and aspirations of the great mass of its people has a high credit. Confidence in such a government runs high and its position seems secure. Of such a nature is the government of a country where land is plentiful, labor well-paid, natural opportunities abundant and living conditions easy. If the people are industrious, enterprising, steady and not overburdened by the debt heritage of past wars, every possible factor is helping to make confidence in the government and the future of the country. But in so far as these conditions are lacking public confidence also fails and credit falls. A government that has lost the respect and confidence of its people is ripe for revolution. Naturally its bonds are not worth much.

Stability of Government Bonds.—The idea that behind the bonds of a nation stands the power to levy upon all the physical wealth in the country is a complete illusion. In theory, it is true that the government has the legal right to levy taxes without limit to make certain the payment of its obligations; but practically, there is a limit beyond which people will not stand taxation. This limit is not a hard and fast thing. It varies with the intelligence, patriotism and sense of solidarity which pervades the masses. Hence it follows that the limit varies not only as between different races and different cultural groups, but varies also in the same group at different times. Taxes are never popular and

the less of them any government is obliged to levy the less critical and better satisfied will its people be. In the last analysis, it must be evident that the real asset behind the bonds of any government is the goodwill of its people; and the real value of its bonds must rise or fall with any changes in the circumstances which affect that goodwill.

Affect of Political Disturbances.—It remains to consider the affect of political disturbances upon the bonds of corporations engaged in productive industry. The value and soundness of such bonds depends upon the producing or earning power of the properties behind them. A serious political disturbance of a revolutionary nature cannot but disturb the ordinary course of business and injure the earning power of all productive enterprises. But it is only a revolution of the extreme radical type, such as we have recently witnessed in Russia, that confiscates and destroys property and property values entirely. A national bankruptcy might take place in which the national debt was repudiated and the government overturned without involving such extreme measures. A nation may be beaten, like Germany, and its national bonds rendered worthless without changing the whole economic system or voiding the obligations of private corporations of their value. The bank credits built on government obligations may lose their value and severe business depression may result, yet, if the framework of the economic system is left intact, production will still go on even though at a diminished rate and the new government will presumably respect private property.

Hence, it is evident that, in the case of revolution, corporation bonds will in any event fare no worse than government bonds and, except in extreme cases, will fare better. Since government bonds are based on good-will, when good-will fails, all is lost; whereas, corporation bonds being based on producing capacity will still retain value so long as the ordinary processes of production are permitted to continue.

Tax-Exempt Bonds

As experience has seemed to show the increasing benefits and fairness of direct taxation over indirect taxation, a new element has been injected into the factors governing the yields to be obtained on bonds. Naturally, throughout the entire world as taxes have been levied on incomes there has been an attempt to so increase income that the results after taxation would remain relatively unchanged. The result in bonds has been the same. An individual formerly satisfied with a yield of 4 per cent on his or her investments demands and obtains a return of say 5 per cent subjected to income taxation, or an equivalent net return. Realizing this situation, our municipalities or other governmental bodies obtained legislation authorizing the exemption from taxation of their securities. Their plea was that as the money was to be used for public improvements it should be obtained as cheaply as possible. The most familiar issues in this country are the bonds and notes of our cities, states, federal government and the federal farm loan bonds. As the interesting developments in the field of tax-exempt bonds have occurred in the

past few years, we will confine our discussion largely to that period. In the United States prior to the European war, the national debt was so light that federal income taxation was of little moment. At that time, however, local taxation was exerting an adverse influence and was helping to bring about the constant advance in bond returns. Non-taxable issues were in greatest demand in localities where the so-called property taxes were heaviest. There was no broad active and consistent demand, however, at the expense of corporation bonds.

With the advent of our entrance into the war, its financing became paramount, and income taxes increased by leaps and bounds. This has developed a strong demand for non-taxables of all character. The first amount of non-taxables available was not equal to the demand and as a result we have seen non-taxable issues giving a slightly lower return during the war period than before, while taxable corporation bonds have shown the largest increase in return in years and years. As and if income taxes show a reverse tendency over a series of years the returns to be obtained on taxables and non-taxables should show a trend directly opposite to that of the past three years. Of greater moment is the effect that the large number of non-taxable issues outstanding has had on the taxes collected by our different states and the federal government. Their existence has really defeated the purpose of the legislation. Wealthy individuals have concentrated their wealth more and more in non-taxable investments. Thus the very men who should con-

tribute large sums to the support of the government escape the heavy toll expected. This has led to considerable discussion of the legality of non-taxable issues and it is quite probable that new issues of bonds of the character formerly non-taxable may be greatly restricted in the future. It does not seem possible that any way can be found to remove the tax-exempt features from bonds of that character now outstanding. For the past three years the last month of the year has seen a steady liquidation of taxable corporation bonds. As commodity prices have advanced and taxes increased, bonds have constantly sought lower levels. Investors, therefore, have faced a constant shrinkage in principal. Federal income taxation laws allow the individual to subtract losses from income. Selling to establish such losses and switches into non-taxable issues have been the features of the year. As usual, such switching is a result of hindsight rather than foresight. Foresight would have suggested it early in 1917 and not since. The forces that have been bringing about a demand for non-taxables and the offsetting liquidation of taxables have undoubtedly seen or passed their peak, given no new legislation as outlined above.

To sum up the conclusions to which the aforementioned considerations seem to point, we may say that the underlying causes are six in number; namely: (1) commodity prices; (2) the possibility of spending; (3) the distribution of income; (4) social and political stability; (5) the productivity of labor; and (6) taxation.

BOND PRICES AND THE GENERAL PRICE LEVEL

The most important of these factors under normal circumstances is the change in the price level of commodities. An examination of Chart No. 6 (preceding article) shows clearly the tendency, *during most of the period* from 1890 to the present time, of bond values to follow in an inverse direction the important changes in the commodity price level; yet if a mathematical correlation were figured for the whole period it would have little value since from 1900 to 1906 the price index was nearly steady and the fluctuations in bond values during that period were plainly due to other causes.

From 1890 to 1896 prices were falling and the yield from bonds also fell to an even greater extent. During this period the extensive application of labor saving devices, especially in agriculture, was responsible for a great increase in the productivity of human labor. Social and political conditions in the United States and in the world at large were stable, and great fortunes were accumulated and invested by successful business men.

The period from 1897 to 1906 was characterized by the formation of most of the great "trusts" and the further creation and expansion of enormous fortunes. Bond yields reached their lowest point and, conversely, bond values reached their peak in 1902 when this process was at its height and commodity prices were stationary. We see that whenever the price level undergoes any important modification the effect on the trend of bond values is marked. On the whole, it would seem that when political con-

ditions become seriously disturbing they can, for the time being, dominate the situation. Note the rise in yields (fall in values) in 1896, the year of the Bryan Free Silver campaign, and 1914-15, when the Great War broke out in Europe; and again when the United States entered the war and the great issues of Liberty Bonds came into the field to compete with other securities for the investors' money. In the latter case rising prices coöperated so strongly with political factors that the separate effects cannot be distinguished. The sudden fall in yields (rise in bond values) following upon the Armistice shows clearly once more the effect of political factors, since the fall in prices followed the movement of bond values instead of preceding it.

The period from 1900 to the present time has been characterized by the multiplication of the possibilities of spending, the most conspicuous example of which is found in the growth of the automobile production from \$4,750,000 in 1899 to \$1,053,506,000 in 1917, which figure has undoubtedly

been passed in 1919 although the figures are not obtainable at the present writing.

The outlook for the future in bond values depends upon the relative strength and direction of pull of the factors which we have outlined. Falling commodity prices will act to raise the value of bonds, and disturbed political conditions throughout the world will act to impair confidence, slow down production and keep the values of bonds low. Until stable conditions are restored it seems that political conditions will largely dominate the situation. After this liquidation is accomplished and the smoke clears away, the inevitable downward movement of prices must tend to raise the value of sound bonds. Meanwhile a system of taxation which discriminates against bonds in favor of preferred stocks is likely to lead, if it is continued for some years, to a considerable substitution of preferred stocks for bonds and a diversion of funds seeking investment into such issues.

Book Department

CALHOUN, ARTHUR W. *A Social History of the American Family*. Pp. 411. Vol. III, Since the Civil War. Cleveland: Arthur H. Clark Co., 1919.

The two preceding volumes in this series covered "The Colonial Period" and "From Independence to the Civil War." The present volume describes the influence of urban industrialism upon the family. The most striking chapters are: The White Family in the New South, The Negro Family Since Emancipation, Miscegenation, The Passing of Patriarchism and Familism, Race Sterility and Race Suicide, Divorce and The Family, and the Social Revolution. As in the preceding volumes the material consists very largely of quotations from writers who have discussed the American family of this period. Since many of these views are not based upon inductive research but represent merely the impressionistic attitude of casual observers, and especially is this true of foreign writers, one may well question whether a true picture of the family is obtained in this way. Non-critical views may be important in establishing popular opinion but are of little scientific value. One great merit of the work is that the author does not dogmatize overmuch in regard to the points presented. As the title of the work indicates it is a "Social History"—a source book of opinion concerning the family,—not a critical history. The field is now open for a series of investigations of a statistical character to prove or disprove the conclusion presented.

The author does, however, arrive at certain definite conclusions which arise out of the vast amount of material presented in the three volumes. "The family is in no sense an independent institution capable of being fashioned, sustained, or modified at will to suit the fancy. It is part and parcel of an organic civilization and must undergo such evolution as will keep it in correspondence with co-existing social institutions whose form and texture seems to depend primarily on the evolution of economic technique." "The American family in its distinctive features has been, as we saw, a product of the ascendancy of the bourgeois class, the dominance of a virgin continent, and the industrial revolution is still at work, now undermining the present social order and the end of class domination is in sight. A

new family is inevitable, a family based on the conservation and scientific administration of limited natural resources, on the social ownership of the instrumentalities of economic production, and the universal enjoyment of the fruits, and on a social democracy devoid of artificial stratification based on economic exploitation." Not all his readers will agree that the material presented warrants so bold a theory of economic determinism for its interpretation as that presented by the author. That there are strong tendencies of the sort indicated no one will deny. There are, however, psychic planes and currents, social survivals of traditions and mores, persistence of instincts and predispositions, and inherited biological tendencies that cannot be ignored; that modify the influences of economic factors. It is not with the principle but with the factors of determinism which the author proposes that we take exception.

The three volumes constitute a monumental work and every student of the family is indebted to the author for its completion.

J. P. LICHTENBERGER.

Philadelphia, Pa.

CANNAN, EDWIN, M.A., LL.D. *The Paper Pound of 1797-1821*. Pp. xlix, 71. London, England: P. S. King & Son, Ltd., 1919.

This report is a reprint of the Bullion Report ordered by the House of Commons on June 8, 1910, with an introduction by Edwin Cannan. This report discusses the cause of the high price of gold, the causes for the lower exchange rate and the relation between the exchange rate and the price of gold bullion, and the increase in the present amount of paper money. The book gives a timely historical background to problems very similar to those of the present day.

HOPKINS, J. CASTELL, F.S.S., F.R.G.S. *The Canadian Annual Review of Public Affairs*. Pp. 879. Toronto, Canada: The Canadian Review, Limited, 1919.

This is the eighteenth year for the issue of this review. The last months of the World War are covered in a running survey in the first one hundred pages of the book. The second one hundred pages are taken with a survey of the part played by the British Empire in the war, includ-

ing reference to the Sinn Féiners and Irish conditions. Then follows a discussion of the United States and the war, socialism and the labor problem, Canadians at the front, Canada's war government and national policy and the provinces of Canada in 1918. There is an index of names and also an index of events and affairs. The supplement contains the first annual report of the Canadian Pacific Railway, a record of this Empire institution in aiding in the war, the annual address and reports of the Bank of Montreal with special reference to financing the war, and important addresses and reports of the Canadian Bank of Commerce. The wealth of material covered is indicated by the fact that the index of names takes ten pages and the index of affairs and events, nine pages of treble column.

WHITE, ARTHUR V. *Water Power of British Columbia*. Pp. 644. Ottawa, Canada: Commission of Conservation, 1919.

This is an inclusive factual survey of water power data throughout British Columbia. The contents include a historical survey of water legislation in British Columbia, certificates of approval—orders in Council—rules, regulations and fees granted for the development of waterway projects, the results of electrical inspection by the province of British Columbia and by the Dominion of Canada, the chief developed and undeveloped water power sites in the Dominion of Canada, a description of the water power possibilities for each of the important rivers such as Columbia River and tributaries, Fraser River and tributaries, Mackenzie River and tributaries, and stream flow and meteorological data. This is a splendid handbook of great public value.

HOLLANDER, JACOB H. *American Citizenship and Economic Welfare*. Pp. 122. Baltimore: Johns Hopkins Press, 1919.

Under the caption "The Weal of Nations," the author discusses the economic conditions of the United States as a result of the great war. Evidences are adduced to show that there has been only a slight reduction in our labor force, small impairment of our natural resources and capital supply, while industrial leadership has been quickened. Instability and disorder are, therefore, psychological rather than physical. To establish public confidence and insure prosperity, we need (1) consistent government policy, (2) courageous deflation of credit, (3) retrench-

ment in public and private expenditure, and (4) arbitral adjustment of industrial disputes.

In discussing "The Laborer's Hire," it is pointed out that the difficulties in the way of securing the laborer's well-being in the present readjustment are (1) unemployment, (2) wage reduction, (3) price inflation and negatively, (4) the restricted social activities of the state. Sound principles of wage adjustment must be based on a basic wage in unskilled labor sufficient for a decent family standard of living and a differential scale for superior work and superior ability. This must be recognized either under conditions of competition or in arbitral awards.

Taxation is discussed under the title "The Sinews of Peace." Fiscal opportunism is rejected, as well as quick liquidation of the public debt by drastic taxation which would involve further credit expansion. The better remedy is "courageous but not reckless amortization by means of widely distributed, equitably imposed taxation—the incidence of which shall be upon increased production or at least current revenue and not upon working capital or bank reserves."

ARONOVICI, CAROL. *Americanization*. Pp. 48. Minneapolis: Kellar Pub. Co., 1919.

This essay is a serious effort to interpret the social and political life of America in those characteristic aspects that distinguish it from European civilization. The material is presented under the following headings: The Meaning and Function of Americanization, Racial and National Assimilation, Conservation of Racial Characters, Language, The Teaching of English, Conservation and Cross-fertilization of Cultures, Distribution of Immigrants, Environment as a Socializing Factor in Americanization, The Immigrant as a Social and Political Unit, Citizenship, The New Nationalism, and Americanization Service.

One purpose runs through the entire discussion namely, to vitalize the fundamental principles of Americanism for both the "stranger within the gates" and the complacent American, in order that out of the heterogeneous racial elements there may develop a homogeneity of ideals and purposes that will guarantee the progress and perpetuity of the greatest of democratic civilizations.

J. P. LICHTENBERGER.
University of Pennsylvania.

Report of the Board of Directors

YEAR ENDING DECEMBER 31, 1919

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE

I. REVIEW OF THE ACADEMY'S ACTIVITIES

When in April, 1917, the United States entered the great war the officers of the Academy felt considerable misgivings with reference to the work of the Academy during the war period. Events have shown, however, that these misgivings were without foundation, as the activity during the war was even more intense and the extension of its influence more rapid than during normal times. The new problems which confronted the country—problems not only unprecedented in magnitude but also of a very different character from those which the country had to face during the earlier period of its history—made it all the more important that a national organization such as the Academy should present to the people of the United States accurate data upon which to base a judgment with reference to national policy.

The close of the war has brought us face to face not only with new problems of international readjustment, but also with the necessity of economic and social reorganization, the full import of which is but dimly seen at the present time. In such a period the Academy is called upon to play a most important part and the officers of the organization desire to have the members of the Academy participate in the responsibilities that this situation involves.

Every member of the Academy owes a debt of gratitude to the editor-in-chief of the Academy's publications, Dr. Clyde L. King, and to his associates for the high standard maintained by the Academy publications. With each year the influence of these publications on the opinion of the country is being strengthened and it is no exaggeration to say that large bodies of citizens depend on them for enlightenment and guidance.

Your Board desires again to call attention to the pressing need of an endowment fund which will enable the Academy to conduct special investigations on a much larger scale than has been possible heretofore, and will also enable the expanding work of the Academy to be properly housed.

II. PUBLICATIONS

During the year 1919 the Academy published the following:

A Reconstruction Labor Policy (January)

Industries in Readjustment (March)

International Economics (May)

International Reconstruction (July)

Modern Manufacturing (September)

The Railroad Problem (November)

III. MEETINGS

In 1919 the Academy held the following meetings:

January 25—Labor's Policy during Reconstruction

May 2 and 3 (23rd Annual Meeting)—International Reconstruction

October 18—The Nation and the Railroads

November 29—Problems confronting the Working Women of the World

IV. MEMBERSHIP

During 1919 we admitted into the Academy 1,308 new members and 195 new subscribers. This is the largest number of new members, and the largest number of new subscribers admitted in any one year on record. The total of new members and new subscribers represents an increase of 38 per cent over any previous year. During the year we lost by resignation 444 members and 28 subscribers. This represents a smaller percentage of resignations than for any previous year. The membership of the Academy on December 31, 1919, was 6,624, with a subscription roll of 1,288, making a total roll of 7,912. The membership and subscription for 1919 represent a total gain over 1918 of 961. Of the 7,912 members and subscribers, 1,616 were in Philadelphia, 5,986 outside of Philadelphia and 310 foreign. Of the 310 foreign, 27 were added during 1919. During the year the Academy lost through death 70 of its members five of whom were life members.

Foreign

Sir E. H. Holden

Dr. Victorino de la Plaza

Thomas Abercrombie Welton

*Maurice Bellom

R. H. Inglis Palgrave

Philadelphia

J. Sellers Bancroft

Charles J. Bender

Charles A. Brinley

Wilson H. Brown

Richard M. Cadwalader

Howard W. DuBois

George S. Fox

William Gorman

Dr. William H. Greene

William B. Hackenburg

Frederick L. Lane

John B. Morgan

Laura N. Platt

Frank P. Prichard

*Elizabeth S. Roberts

Kenton Saulnier

John Sparhawk, Jr.

D. A. Waters

Outside

Joseph F. Bartlett

A. Benton

George M. Booth

Rt. Rev. F. K. Brooke

Andrew Bryson

Mrs. Caleb E. Burchenal

Coke K. Burns

*Andrew Carnegie

Dwight Clark

Horace E. Deemer

Edwin T. Earl

Howard P. Eells

Henry D. Estabrook

E. B. Field

* Life member.

*J. B. Finley
T. B. Fitzpatrick
Dr. Merrill P. Freeman
C. A. Griscom
Joseph K. Gwynn
Edith V. Hagert
Paul Herriott
Charles F. Hoerr
Russell S. Hubbard
Walter D. Karcher
V. M. Kine
G. Lavaguino
C. Lombardi
Paul Lüpke
Charles H. Manning
John B. McKilligan
W. W. Mitchell

*Louis Mohr
T. M. Morgan
Edward D. Page
James Laughlin Phillips
Dr. Wm. Mecklenburg Polk
James F. Post
George G. Rohlig
Wallace H. Rowe
P. A. Small
Sam Ferry Smith
Francis J. Torrance
Louis A. Vallee
Frederick B. Van Vorst
Henry Warden
Edward Hunter Williams
E. C. Witherby

The death of these members has deprived the Academy of some very warm friends and enthusiastic workers.

V. FINANCIAL CONDITION

The receipts and expenditures of the Academy for the fiscal year just ended are clearly set forth in the treasurer's report. The accounts were submitted to Messrs. E. P. Moxey & Co. for audit, and copy of their statement is appended herewith.

In order to lighten the burden of expense incident to the Annual Meeting a fund of \$1,135 was raised. The Board desires to take this opportunity to express its gratitude to the contributors to this fund.

VI. CONCLUSION

Your Board desires again to point out the great possibilities of public usefulness which each member of the Academy enjoys in contributing within the measure of his power toward the extension of the influence of our organization. The officers of the Academy can do little if they are not assured of the warm and earnest coöperation of every member. A national organization with members in all sections of the country can make its influence felt throughout the nation, but this can only be done when the members are keenly alive to the importance of coöperating with the officers in strengthening the Academy's work. With such coöperation we may look forward to the ever broadening influence of our organization.

* Life member.

January 12, 1920.

CHARLES J. RHOADES, ESQ., TREAS.,

*American Academy of Political and Social Science,
Philadelphia,*

Dear Sir: We herewith report that we have audited the books and accounts of the *American Academy of Political and Social Science* for its fiscal year ended December 31, 1919.

We have prepared and submit herewith statement of receipts and disbursements during the above indicated period, together with statement of assets as at December 31, 1919.

The receipts from all sources were verified by a comparison of the entries for same appearing in the Treasurer's cash book with the record of bank deposits and were found to be in accord therewith.

The disbursements, as shown by the cash book, were supported by proper vouchers. These vouchers were in the form of cancelled paid checks or receipts for moneys expended. These were examined by us and the correctness of the payments verified.

The investment securities listed in the statement of assets were examined by us and were found to be correct and in accord with the books.

As the result of our audit and examination we certify that the statements submitted herewith are true and correct.

Yours respectfully,

EDWARD P. MOXEY & Co.,

Certified Public Accountants.

Balance Cash on Hand January 1, 1919.....		\$7,567.50
---	--	------------

Receipts

Members' Dues.....	\$27,415.79	
Special Donations.....	1,135.00	
Subscriptions:		
Individuals.....	\$667.80	
Libraries.....	595.45	
Agents.....	2,024.55	4,187.80
		<hr/>
Sales of Publications.....	4,666.22	
Interest on Investments and Bank Balance.....	5,127.35	
Investments Matured.....	10,000.00	52,532.16
		<hr/>

\$60,099.66

Disbursements

Office Expense:		
Office Salaries.....	\$4,076.01	
Special Clerical Services.....	68.69	
Supplies and Repairs.....	463.09	
Stationery and Printing.....	177.18	
Telephone and Telegraph.....	388.18	
Postage.....	578.40	
Freight, Express and Carfare.....	18.96	
General Expense.....	1,000.06	\$6,770.57

Philadelphia Meetings:

Salaries.....	\$1,180.37	
Hall Rents.....	752.50	
Stationery, Engraving and Printing.....	1,295.32	
Expenses of Speakers.....	426.40	
Postage.....	308.61	
Telephone and Telegraph.....	33.60	
Carfare, Newspapers, etc.....	127.83	4,124.63

Publicity Expense:

Salaries.....	\$1,969.01	
Pamphlets, Card, etc.....	570.53	
Postage.....	1,343.71	
Stationery, Supplies and Repairs.....	1,145.31	
Telephone.....	1.00	5,029.56

Publication of *Annals*:

Salaries.....	\$2,329.00	
Printing.....	10,864.13	
Reprints.....	1,346.20	
Binding.....	802.61	
Postage.....	1,959.96	
Advertising.....	925.00	
Stationery and Supplies.....	543.76	
Freight, Express, Carfare and Sundries.....	78.20	
Telephone and Telegraph.....	240.96	
Storage and Insurance.....	7.72	19,097.54

Membership:

Salaries.....	\$2,295.48	
Stationery and Supplies.....	260.32	
Postage.....	260.60	
Sundries.....	25.67	2,842.07

Investments:

Purchased.....	\$14,250.00		
Interest, Premiums and Commissions.....	192.09	14,442.09	\$52,306.46

Balance December 31, 1919.....			\$7,793.20
--------------------------------	--	--	------------

ASSETS

Investments (book value).....			\$109,755.77
-------------------------------	--	--	--------------

Cash:

In Academy Office.....	\$300.00		
In Treasurer's Hands:			
Centennial National Bank.....	200.00		
Girard Trust Company.....	7,293.20	7,793.20	
			\$117,548.97

Index

- ADDINSELL, H. M. Public Service Bonds, 63-72.
- American investors, 134. *See also* Investors.
- ARENS, HERMANN F. and BANCROFT, JAMES R. Causes Affecting the Value of Bonds, 200-211; The History of Bond Prices, 188-199.
- Assessments, readjustment of, 109.
- BANCROFT, JAMES R., ARENS, HERMANN F. and. Causes Affecting the Value of Bonds, 200-211; The History of Bond Prices, 188-199.
- Bankers, investment, private enterprise and, 35.
- Banking: commercial, 34; foreign investment, 144; investment, 35.
- Bankrupt corporations: character of business 25; public attitude toward, 24.
- Banks: Federal Land, 96; liability of, 100; loans, 97.
- Joint Stock land: rate of interest 101; security of, 100; stock ownership of, 101.
- "Blue Sky" Laws, 178-85.
- BOND, BABY, THE INSTALLMENT PLAN AND THE. Robert Riegel, 169-176.
- Bond districts, formation of, 54.
- issues: amount of, 69; economic position of, 25; public utilities, 69; special, 29; strategic position of, 26.
- BOND, MODERN DRAINAGE, RECLAMATION OF SWAMP LANDS AND THE. J. Sheppard Smith, 102-113.
- BOND PRICES, THE HISTORY OF. Hermann F. Arens and James R. Bancroft, 188-199.
- Bond prices: general price level of, 210; factors affecting, 200-201; fluctuation causes, 190; present conditions of, 191; since 1862, 190-191. *See also* Prices.
- BOND VALUES, TABLES OF—THEORY AND USE. Montgomery Rollins, 12-22.
- Bondholders' Committees, purpose of, 58.
- Bonds: bought at discount, 18; Canadian, 139-143, 141; city, 52; collateral, 7; convertible, 10, 77; corporation, 6, 7; county, 52; coupon, 10; definition, 201; district, 52; drainage bonds, 112, 113; farm loan bonds, 95-101; government, 123, 207, 4, 208; income, 8; industrial, 73-78; investment, 190; junior mortgage, 30; mortgage, 6, 7, 8, 92, 93, 95; municipal, 5, 51-56, 162, 164, 167; national, 51; negotiability, 10; "non tax covenant," 11; optional, 16, 17; perpetual, 9; pre-war, 50; public utility, 70; railroad, 60, 189; real estate, 79, 92, 93; "redeemable," 9; registered, 10; sale of, 16; school, 52; secured and unsecured, 6; serial, 9; sinking fund, 9; sold at premium, 17, 18; special assessment, 5, 53, 54; state, 4, 51; "tax covenant," 11; taxable and tax exempt, 160, 209; taxation, 11; United States government, 189.
- BONDS, CANADIAN. G. A. Macpherson, 139-143.
- BONDS, CLASSIFICATION OF INVESTMENT. Hastings Lyon, 4-11.
- BONDS, FARM LOAN, UNDER THE RURAL CREDITS ACT. Richard S. Stoye, 95-101.
- BONDS, FOREIGN CORPORATE, IN THE AMERICAN MARKET. Arthur J. Rosenthal, 130-138.
- BONDS, FOREIGN GOVERNMENT. Thomas W. Lamont, 121-129.
- BONDS, INDUSTRIAL. John Moody, 73-78.
- BONDS, PUBLIC SERVICE. H. M. Addinsell, 63-72.
- BONDS, RAILROAD. F. J. Lisman, 57-62.
- BONDS, REAL ESTATE, AS AN INVESTMENT SECURITY. George A. Hurd, 79-94.
- BONDS, TREATMENT OF, AT THE TIME OF REORGANIZATION. Arthur S. Dewing, 23-33.
- BONDS, UNITED STATES GOVERNMENT. C. Frederick Childs, 43-50.
- BONDS, VALUE OF, CAUSES AFFECTING THE. Hermann F. Arens and James R. Bancroft, 200-211.
- Canadian bonds, in United States, securities market for, 141-142.
- CANADIAN BONDS. G. A. Macpherson, 139-143.
- Capital: circulating, 35; fixed, 35; surplus, 34; United States, 130-131.
- CHILDS, C. FREDERICK. United States Government Bonds, 43-50.
- City bonds, 52. *See also* Bonds.
- Collateral bonds, 7. *See also* Bonds.
- Commerce: after World War, 114; stimulation of, 119.
- Commercial banking, 34-35. *See also* Investment Banking.
- COMPTON, W. R. Municipal Bonds, 51-56.
- Convertible bonds, 77. *See also* Bonds.
- Corporate Reorganization: definition of, 23; "imperatives," 27; legislation, 26.
- Corporation bonds, 6-7. *See also* Bonds.
- County bonds, 52. *See also* Bonds.

- Credit: extension methods of, 177; granting of, 116; legislation, 117; South American, 148.
Crédit Foncier of France, 81.
- "Debentures," 6, 30.
- Debts, World, 121.
- Deposits, initial, 170.
- Depression, definition of, 191.
- DREWING, ARTHUR S. Treatment of Bonds at the Time of Reorganization, 23-33.
- District bonds, 52. *See also* Bonds.
- Drainage bonds: market for, 112; security of, 113. *See also* Bonds.
- Electric power companies, importance of, 63.
- Enabling Acts, 54.
- European interest rates, war loans, 46, 136.
See also Interest Rates.
- Exchange rates, 135.
- FARM LOAN BONDS UNDER THE RURAL CREDITS ACT. Richard S. Stoye, 95-101.
- Farm loan districts, federal, 96.
- Finance: Canadian, 141; international, 131; national, and taxation, 43. *See also* Taxation.
- Financial position of United States, 130.
- Financing, methods of, 53.
- FOREIGN CORPORATE BONDS IN THE AMERICAN MARKET. Arthur J. Rosenthal, 130-138.
- Foreign securities. *See* Securities.
- FOREIGN GOVERNMENT BONDS. Thomas W. Lamont, 121-129.
- Foreign investment, necessity for, 119.
 — trade, problem of, 129. *See also* Trade.
- FOREWORD. S. S. Huebner, 1-3.
- Gas companies, necessity for, 63.
- General property tax, limitations of, 161.
- Government bonds: advantages of, 123; after Civil War, 189; amount outstanding, 44; characteristics of, 123; definition of, 207; nature of, 43; perpetual, 9; sovereign power of, 4; stability of, 208. *See also* Bonds.
- Government reclamation, 102.
- HUEBNER, S. S. Foreword, 1-3.
- HURD, GEORGE A. Real Estate Bonds as an Investment Security, 79-94.
- Income, distribution of, 204.
 — bonds, definition of, 8.
 — income taxes, excessive, 59; Massachusetts, 160. *See also* Taxes.
- Industrial bonds: after 1902, 72; before 1900, 73; business representation of, 78; nature of, 76; security of, 77; today, 75. *See also* Bonds.
- INDUSTRIAL BONDS. John Moody, 73-78.
- INSTALLMENT PLAN, THE, AND THE BABY BOND. Robert Riegel, 169-176.
- Insurance investment, 173. *See also* Investment.
- Interest, "accrued," 14.
 — rates: current, 200; European, 46, 136; fixed, 13; fluctuation factors, 158; increase of, 157; varied, 12.
- International finance, 131.
- INVESTMENT, AMERICAN, IN FOREIGN SECURITIES, THE NEED FOR. James Sheldon, 114-120.
- Investment banker: private enterprise, 35; public finance, 36-40.
 — banking, commercial, 34-35.
- INVESTMENT BANKING HOUSE, THE WORK OF AN. Hastings Lyon, 34-42.
- Investment bonds, before 1860, 190. *See also* Bonds.
- INVESTMENT BONDS, CLASSIFICATION OF. Hastings Lyon, 4-11.
 — service, 173.
- INVESTMENT SECURITY, REAL ESTATE BONDS AS AN. George A. Hurd, 79-94.
- Investment securities: installment plan, 169; partial payment, 170-172.
- Investments, advantages of, 132; European, 121-122, 133; foreign, 119, 125, 131; insurance, 173; interest, 139; speculation, 199; small-scale, 172; South America, 146.
- Investor: American, 134; definition of, 199.
- KIES, WILLIAM S. Latin American Securities, 144-155.
- Labor, productivity of, 204.
- LAMONT, THOMAS W. Foreign Government Bonds, 121-129.
- LATIN AMERICAN SECURITIES. William S. Kies, 144-155.
- Legislation: credit, 117; railway, 60; state, 104-107. *See also* Credit.
- LISMAN, F. J. Railroad Bonds, 57-62.
- Loans: Federal Land Bank, 97; first mortgage, 98; foreign extent of, 130; public, 40; significance of, 118; South American requirement, 148; World War, 45-46.
- LYON, HASTINGS. Classification of Investment Bonds, 4-11; the Work of an Investment Banking House, 34-42.

MACPHERSON, G. A. Canadian Bonds, 139-143.
Markets: American, 150; foreign, 119; European, 150; export, 114.

Money, definition of, 201; methods of procuring new, 32.

MOODY, JOHN. Industrial Bonds, 73-78.

Mortgage associations: European, 81-83; factors encouraging, 80; general characteristics, 80.

Mortgage-Bond Company, American, 91.

Mortgage bonds: closed, 8; collateral security, 7-8; long-time, 95; open, 8; real estate, 92-93. *See also* Bonds.

— companies, Italy, Spain, Portugal, England, 81, 82.

— investments, convertibility of, 93.

— loans, elements of, risk of, 84-85.

Mortgages, forms of, 58.

MUNICIPAL BONDS. W. R. Compton, 51-56.

Municipal bonds: classification of, 51, 162; definition of, 51, 162; determining factors of, 56; indications of, 56; yield of, 164. *See also* Bonds.

National bonds, 51. *See also* Bonds.

National Farm Loan associations: earnings, 99; membership, 97-98; shareholders' liability of, 98.

New York Stock Exchange, sale of bonds in, 16.

Odd-Lot Dealers, 169.

OSGOOD, ROY C. The Effect of Taxation on Securities, 156-168.

Panic, definition of, 191.

Payment, Partial-, Plan: abuses of, 174; benefits of, 172; operation of, 170-172.

Pre-War bonds, 50. *See also* Bonds.

Price level: changes in, 201; general, 210.
— movement, 122.

Prices: bond, 190-191, 200-201; emergency, 201; railroad and industrial stock, 201.

PRICES, BOND, THE HISTORY OF. Hermann F. Arens and James R. Bancroft, 188-199.

Production: European, 115; causes for increase, 130.

Profit: through foreign investment, 131-132; possibilities of, 128.

PUBLIC SERVICE BONDS. H. M. Addinsell, 63-72.

Public utilities: bond issues on, 69, 72, 71; importance of, 24; municipal bonds and, 5; state regulation of, 66.

Public Utility companies: amount of bond issues, 71; capitalization of, 63; characteristics of, 65-66; development of, 65-66; general classes of, 67.

RAILROAD BONDS. F. J. Lisman, 57-62.

Railroads: bonds, 60, 76, 189; capitalization of, 57; decline of credit, 59.

Railway legislation: necessity of, 62; pending, 60.

Railways, Street, rate regulation, 66-67.

Real Estate: depreciation of, 88; foreclosure of, 89-90.

Real estate bonds: definition of, 79; security of, 79. *See also* Bonds.

REAL ESTATE BONDS AS AN INVESTMENT SECURITY. George A. Hurd, 79-94.

Real Estate mortgage bonds: advantages of, 93; interest rates of, 92; security of, 90; stability of, 92-93. *See also* Bonds.

— values: commercial depression effect, 86; financial depression effect on, 86; judgment of, 85; loss of, 87, 90.

Receivers' certificates at reorganization, 28.

Reclamation: effects of, 111; government, 102.

RECLAMATION OF SWAMP LANDS AND THE MODERN DRAINAGE BOND. J. Sheppard Smith, 102-113.

REED, ROBERT R. "Blue Sky" Laws, 177-187.
Refunding bonds, definition of, 9.

RIEDEL, ROBERT. The Installment Plan and the Baby Bond, 169-176.

ROLLINS, MONTGOMERY. Tables of Bond Value — Theory and Use, 12-22.

ROSENTHAL, ARTHUR J. Foreign Corporate Bonds in the American Market, 130-138.

RURAL CREDITS ACT, FARM LOAN BONDS UNDER THE. Richard S. Stoyale, 95-101.

School bonds, 52. *See also* Bonds.

Securities: bonds and other, 199; Canadian market in United States, 142; federal farm loan, 164; foreign, 118, 137; government, 207; industrial, 207; investment in foreign markets, 144; public sale of, 41; safeguards of, 82-84; street railway, 68; South American market in United States, 145, 149; taxation, 11; tax exempt, 162.

Secured bonds, classification, 6. *See also* Bonds.
SECURITIES, THE EFFECT OF TAXATION ON. Roy C. Osgood, 156-168.

SECURITIES, LATIN AMERICAN. William S. Kies, 144-155.

Security Investments, installment plan, 169.

- SECURITIES, FOREIGN, THE NEED FOR AMERICAN INVESTMENT IN. James Sheldon, 114-120.
- "Serials," 17.
- Serial bonds, definition of, 9.
- SHELDON, JAMES. The Need for American Investment in Foreign Securities, 114-120.
- Sinking fund, influencing factors, 18, 70.
- bonds, 9.
- SMITH, J. SHEPPARD. Reclamation of Swamp Lands and the Modern Drainage Bond, 102-113.
- Solvency record, governmental, 122.
- Special assessment bonds, 6, 53, 54. *See also* Bonds.
- Speculation and Investment, 199. *See also* Investment.
- Speculator, definition of, 199.
- State: bonds, 51; legislation, 104-107; regulation inadequacy, 183.
- Stocks: industrial prices of, 201; irredeemable, 14; preferred, 165; railroad, 201; redeemable, 14.
- STOYLE, RICHARD S. Farm Loan Bonds Under the Rural Credits Act, 95-101.
- Street railway: 66, fares, 68; rate regulation, 68; valuation, 68; securities, 68. *See also* Railways.
- companies, necessity of, 64.
- Surplus Capital, Distribution of, 35. *See also* Capital.
- TAXATION, THE EFFECTS OF, ON SECURITIES. Roy C. Osgood, 156-168.
- Taxation: 11; drainage bonds, 105, 108; effects on bondholders, 156; national finance and, 43.
- Tax exempt bonds and securities, 162, 209. *See also* Bonds.
- Taxes: capitalization of, 156; community property, 53; effect of evasion, 157; excess, 167; excessive income, 59; exemptions, 101; federal, 161; free covenant, 164; general property, 159, 161; income, 162; municipal property, 53; state, 159, 160; war-profits, 167.
- Taxing power, municipal bonds and, 5.
- Telephone companies, importance of, 64.
- Thrift: agencies in United States, 169; national asset, 173.
- Town bonds, 52. *See also* Bonds.
- Trade, foreign, problem of, 129.
- relations, United States and Canada, 140.
- Transportation system, conditions of American, 61.
- United States, economic position of, 114, 130.
- United States: debt of, 44; income of, 44; nature of, 64; wealth of, 44.
- UNITED STATES GOVERNMENT BONDS. C. Frederick Childs, 43-50.
- War Finance Corporation, 46.

I have been thinking much lately of the
past. The days are so full of memories
that I often feel as if I were living
over again. The things that I have
done, the people that I have met, the
places that I have been to, all come
back to me so clearly that I often
feel as if I were living over again.
I have been thinking much lately of the
past. The days are so full of memories
that I often feel as if I were living
over again. The things that I have
done, the people that I have met, the
places that I have been to, all come
back to me so clearly that I often
feel as if I were living over again.

I have been thinking much lately of the
past. The days are so full of memories
that I often feel as if I were living
over again. The things that I have
done, the people that I have met, the
places that I have been to, all come
back to me so clearly that I often
feel as if I were living over again.

PRICES

The Annals

VOLUME LXXXIX

MAY, 1920

EDITOR: CLYDE L. KING

ASSISTANT EDITOR: C. H. CRENNAN

ASSOCIATE EDITOR: J. H. WILLITS

EDITORIAL COUNCIL: THOMAS CONWAY, JR., A. A. GIESIECKE, A. R. HATTON, AMOS S. HERSHEY, E. M. HOPKINS, S. S. HUEBNER, CARL KELSEY, J. P. LICHTENBERGER, ROSWELL C. MCCREA, E. M. PATTERSON, L. S. ROWE, HENRY SUZZALO, T. W. VAN METRE, F. D. WATSON

*Editor in Charge of
this Volume*

CLYDE L. KING, Ph.D.,
University of Pennsylvania.

*pp I-IV
pp 1-289
2 plates in margin
114-126a*



THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE,
36TH STREET AND WOODLAND AVENUE,
PHILADELPHIA,
1920

Copyright, 1920, by
THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE
All rights reserved

EUROPEAN AGENTS

ENGLAND: P. S. King & Son, Ltd., 2 Great Smith St., Westminster, London, S. W.
FRANCE: L. Larose, Rue Soufflot, 22 Paris.
GERMANY: Mayer & Müller, 2 Prinz Louis Ferdinandstrasse, Berlin, N. W.
ITALY: Giornale Delgi Economisti, via Monte Savello, Palazzo Orsini, Rome.
SPAIN: E. Dossat, 9 Plaza de Santa Ana, Madrid.

CONTENTS

PRICES

	PAGE
<i>PART I—PRESENT DAY PRICES</i>	
GAINS AND LOSSES CAUSED BY RISING PRICES.....	1
Fabian Franklin, Editor, <i>The Review</i>	
PROSPECTIVE CHANGES IN THE PRICE LEVEL.....	8
E. M. Patterson, Ph.D., University of Pennsylvania	
MOVEMENT OF WHOLESALE PRICES IN VARIOUS COUNTRIES DURING AND SINCE THE WAR.....	13
Leifur Magnusson, Bureau of Labor Statistics, United States Department of Labor	
THE PRICES OF TODAY.....	15
J. S. Crutchfield, President, American Fruit Growers, Pittsburg, Pa.	
PRESENT DAY PRICES.....	18
Howard E. Figg, Assistant Attorney-General, United States Department of Justice	
AMERICAN CONTROL OVER PRICES.....	22
Paul Willard Garrett, American International Corporation, New York City	
<i>PART II—PRICE FACTORS IN TYPICAL COMMODITIES</i>	
A. FOOD, CLOTHING AND SHELTER	
THE TREND IN WHOLESALE PRICES FOR THE PRODUCTS OF AMERICAN FARMS DURING THE WAR PERIOD.....	44
Clyde L. King, Ph.D., University of Pennsylvania	
THE AFTER-WAR FALL IN MEAT PRICES.....	51
L. D. H. Weld, Swift and Co., Chicago, Ill.	
PRICE FLUCTUATIONS IN THE WOOLEN INDUSTRY.....	53
Katharine Snodgrass, Federal Reserve Board, New York City	
PRICE FACTORS IN MEN'S READY-TO-WEAR CLOTHING.....	61
Siegmund Sonneborn, President, Henry Sonneborn & Co., Inc., Clothing Manufacturers, Baltimore, Md.	
THE HOUSING SHORTAGE AND THE SUPPLY OF BUILDING MATERIALS....	67
Homer Hoyt, Delaware College, Newark, Del.	
HOUSING AND BUILDING CONDITIONS.....	74
Ernest T. Trigg, Vice-President, John Lucas and Co., Inc., Philadelphia, Pa.; formerly President, Chamber of Commerce, Philadelphia, Pa.	
LUMBER PRICES.....	78
R. C. Bryant, Yale University	
B. MINERALS AS ESSENTIAL RAW MATERIALS	
MINERALS AS ESSENTIAL RAW MATERIALS.....	99
George Otis Smith, Director, United States Geological Survey	
COPPER.....	103
B. S. Butler, United States Geological Survey	
THE PETROLEUM RESOURCES OF THE WORLD.....	111
David White, United States Geological Survey	
<i>PART III—WAGES, PROFITS AND EXCESS PROFIT TAXES</i>	
HAVE WAGES KEPT PACE WITH THE COST OF LIVING?.....	135
Erville B. Woods, Dartmouth College	

THE COURSE OF PROFITS DURING THE WAR.....	148
Bruce D. Mudgett, University of Minnesota	
HAVE PROFITS KEPT PACE WITH THE COST OF LIVING?.....	157
Basil M. Manly, Director, The Scripps Economic Bureau, Washington, D. C.; formerly Joint Chairman, National War Labor Board	
X PRICES AND EXCESS PROFITS TAXES.....	163
David Friday, University of Michigan	
<i>PART IV—PRODUCTION</i>	
THE PROBLEM OF INCENTIVES AND OUTPUT.....	170
Ordway Tead, Bureau of Industrial Research, New York City	
“MORE PRODUCTION?”—SAY, WHERE D’YA GET THAT STUFF?.....	180
Whiting Williams	
<i>PART V—COÖPERATION</i>	
COÖPERATION AND PRICES.....	187
Eugene H. Porter, Commissioner of Foods and Markets, Albany, N. Y.	
PLANS FOR EXTENDING COÖPERATIVE BUYING AND SELLING IN THE UNITED STATES.....	193
O. S. Beyer, Jr., Mechanical Engineer, New York and Washington, D. C.	
<i>PART VI—INTERNATIONAL FINANCE AND TRADE IN THEIR RELATION TO PRICES</i>	
FOREIGN EXCHANGE, PRICES AND THE COURSE OF INTERNATIONAL TRADE.....	197
John H. Williams, Ph.D., Princeton University, Princeton, N. J.	
PRESENT DAY INDUSTRIAL CONDITIONS IN GERMANY.....	211
R. W. Balderston, Secretary, Inter-State Milk Producers' Association, Philadelphia, Pa. At present in Germany as Member of the American Friends Service Committee	
THE WORLD BREAKDOWN.....	219
Sir George Paish, London, England	
THE DANGERS OF INTERNATIONAL GOVERNMENTAL LOANS.....	227
Oscar T. Crosby, Formerly Secretary of the United States Treasury	
<i>PART VII—INFLATION AND PRICES</i>	
THE SEQUENCE IN WAR PROSPERITY AND INFLATION.....	234
Alvin H. Hansen, Ph.D., University of Minnesota	
THE CAUSE AND PROCESS OF INFLATION.....	247
George E. Roberts, Vice-President, National City Bank, New York City	
INFLATION.....	253
Jacob H. Hollander, Ph.D., Johns Hopkins University	
<i>PART VIII—THE WORLD'S MONETARY PROBLEMS</i>	
SOME LEADING PROPOSITIONS FOR AN INTERNATIONAL DISCUSSION OF THE WORLD'S MONETARY PROBLEM.....	258
Gustav Cassel, University of Stockholm, Sweden	
DISCUSSION:	
B. M. Anderson, Jr., National Bank of Commerce, New York City	
Lord D'Abernon, Surrey, England	
Irving Fisher, Yale University	
Wm. A. Scott, University of Wisconsin	
Walter Lichtenstein, Foreign Trade Department, First National Bank, Chicago, Ill.	
A. Barton Hepburn, Chairman, Advisory Board, Chase National Bank, New York City	
Edwin Cannan, M.A., LL.D., Dean, Faculty of Economics, University of London	

Gains and Losses Caused by Rising Prices

By FABIAN FRANKLIN

Editor, *The Review*

THE enormous advance in prices, which has taken place in the past five years, has caused disturbances, material and psychological, so grave as to be comparable with those directly caused by the waste and destruction of the war itself. The unsettled condition of people's minds in relation to the familiar concerns of daily life, which has attended the disarrangement of price relations, has contributed no inconsiderable share to the social unrest with which the world is beset. While the general level of prices has, let us say, doubled, many large classes of incomes have remained stationary, or nearly so, and others have tripled, and quadrupled, and more. In this situation, owing to the very general tendency of human beings to cry out when they suffer loss or injury and to say little or nothing when they are the recipients of unexpected gain, it was inevitable that the air should be filled with lamentations, while of rejoicing over good fortune little is heard by the public. And, aside altogether from this peculiarity of human nature, it is only too true that such a disturbance of prices as we have been witnessing must be thought of as preponderantly evil. When, through no merit of their own, but through the automatic effect of a change in the monetary situation, one class of persons is enabled to indulge in unaccustomed luxuries, this cannot be regarded as an offset to the hardships of a lowered standard of

living to which, through no fault of their own, that same change subjects another class.

HIGH PRICES DISTINGUISHED FROM HIGH COST OF LIVING

All this should be clearly admitted and understood. But it is nevertheless true that a considerable part of the popular feeling on the subject, a considerable part of the indefinite discontent which the situation arouses, may be ascribed to an unfortunate use of language. It may seem fantastic to assert that if, instead of "high cost of living," we had all habitually spoken of "high prices," a great deal of error, both intellectual and emotional, would have been avoided. But that is the sober truth. "High cost of living" instantly and inevitably suggests hardship; it naturally brings up the thought that everybody has to do more work in order to get the same "living." In point of fact, long before the war, and when the rise of prices, though serious, was trifling in comparison with the present scale, the constant use of the phrase "high cost of living" had engendered a widespread feeling not only that life was becoming more and more difficult for people in general, but also that this phenomenon was an inevitable part of the development of modern civilization. This feeling could not have arisen, or at least could not have attained such prevalence, if people had habitually spoken of "high prices,"

instead of "high cost of living." The community as a whole *may* suffer from a genuine *high cost of living*—a high cost of living brought about by a falling off in productive power; but there is nothing in the mere fact of *high prices* that necessarily suggests such a falling off. As a matter of fact, in the pre-war period the high prices were neither caused, nor supposed to be caused, by any decline of productivity; the *real* cost of living of the community as a whole had not increased; its total income as measured in the volume of commodities and services at its disposal was not lessened; and the only way in which anybody had been affected adversely was through his particular income not having risen by as great a percentage as that by which the general level of prices had been increased. Some incomes had risen by more, and some by less than this latter percentage; if all had risen by the same percentage, nobody would have been either gainer or loser. And, while "the man in the street" might not always have borne this in mind, yet it would never have been far from his thoughts if he had been in the habit of talking and hearing of "high prices;" whereas the phrase "high cost of living," with its strong and instinctive implication of evil, stands in the way of any thinking that he might otherwise do on the subject.

FACTORS IN THE RISE OF PRICES

Actual Scarcity.—During and since the war it has unfortunately been true that the cost of living has risen in the true sense as well as in the sense in which the phrase is popularly used. There has been destruction of capital,

devastation and impairment of natural resources, all on a great scale; and, though these things have not taken place in our country, the vast exports that we have made to supply the deficiencies of Europe have had the same effect on our home supply—for the time being—as diminished productivity would have had. Enormous governmental expenditures—in other words, the diversion of effort and of natural resources from productive to non-productive purposes—have produced an effect of the same nature. Moreover, there is good reason to believe that there has been a slackening of working power caused both by lessened hours of work and by diminished energy in the worker, which has contributed another important item to the lessening of productivity. On the other hand, it ought not to be overlooked that there has been a large accession to the working forces of the country through the addition of hundreds of thousands of women to the ranks of the wage earners and salary earners. On the whole, it seems clear that actual scarcity, the net result of these various causes, has been a considerable factor in the rise of prices. But a moment's reflection must suffice to show that by far the greatest element in the case is the fall in the purchasing power of money caused by the great increase in the volume of the monetary medium; that is, of ordinary currency and of bank credits. For, while this volume has been increased by about 100 per cent, anybody who looks about him and sees what people are eating, and wearing, and enjoying generally, must realize that if the supply of commodities has diminished, it has cer-

tainly diminished by but a small fraction of such a percentage. In the main, then, what is going on around us is the long-familiar phenomenon of rising prices caused by an increase in the volume of the monetary medium; the rise, however, in the present instance being of an extent and rapidity never before witnessed in so vast a field, and presenting also some peculiarities due to the special circumstances of the time.

Decline in Purchasing Power of Money.—When such a rise of prices—such a fall in the purchasing power of money—takes place, most classes of income suffer (or the reverse) only through the irregularity with which the rise is put into effect. But there is one large class that takes a dead loss, with no compensation or readjustment. Incomes derived from fixed money obligations due to their possessors by others continue to yield the number of dollars nominated in the bond and no more, however rapidly the purchasing power of those dollars may decline. Interest on bonds issued by governments or corporations; interest on long-term mortgages; ground rents, either irredeemable, or having a long term of years to run, or redeemable at the pleasure of the lessee at a fixed capitalization, are instances of this kind of income. The loss suffered by the lessened purchasing power of the monetary unit in incomes of this kind continues (supposing that the high prices continue) without any compensatory gain during the entire term for which the obligation runs. And even at the end of that term there is no assurance that any compensating factor will enter into the case. Those

who invest money *during* a time of steadily rising prices do find some compensation for the loss in the value of their principal in that rise of the rate of interest which both theoretical considerations and practical experience show to be an accompaniment of rising prices. But *high* prices, as distinguished from *rising* prices, have no tendency whatever to cause an increase of the rate of interest. Accordingly, the holder of a bond of which the principal falls due *after* the period of rising prices has ended, but while the high level of prices is still maintained, gets no offset for the fall in the value of his principal through any increase in the rate of interest.

In the case of annuities, of course, the loss is still more evidently without compensation, annual income being the only element in the case. It is one of the remarkable facts in the story of this period of falling value of money that one has heard so little of the sufferings of those whose incomes, being in whole or in part definitely fixed in terms of money, have been so disastrously cut down. In the days of falling prices, in the '80's and '90's of the last century, the heavens were rent with the outcries of the "debtor class." It is a most noteworthy circumstance that nothing of the kind is heard in these times from the creditor class, nor is it without interest to observe that the "debtor class" is as mute over its blessings today as it was vociferous over its injuries thirty years ago.

ADJUSTMENT OF SALARIES AND WAGES TO INCREASED PRICES

Apart from the case of fixed money income, the way in which different

classes are affected by the rise of prices turns on the slowness or the rapidity with which the price commanded by the commodities or services which they supply becomes adjusted to the general rise. It is a familiar fact that salaries are slowest of all to respond. There are many reasons for this. One is that salaried positions are more individual in their character than are wage-workers' jobs. A person holding a salaried position runs a kind of risk in giving it up quite different from that which even a skilled workman, not to speak of an unskilled laborer, encounters. The question of organization has comparatively little to do with the case. No class of workers, perhaps, has had its compensation more strikingly increased than that of domestic servants, who have no organization at all; the great point in their case is that they have no difficulty in finding new jobs when they throw up their old ones. Most classes of salaried workers are very differently placed in this regard. But there is also another factor which exercises a great influence in the matter of salaries. Once raised, it is difficult to lower them, and employers hesitate to make what they feel would be a permanent advance in their expenses when they are not certain of the permanence in the rise of prices. Where very large profits have been made by business concerns, they have, in a great many instances, made handsome additions to salaries in the shape of a bonus at the end of a year; but this has been far from being so general in practice as might be desired. Moreover, a large proportion of all the salaried classes are in the service of governmental and other public insti-

tutions. In the case of government officials, the raising of salaries has been impeded both by mere inertia and by the justified feeling that salaries once raised by law are almost sure to stay at the advanced point, whatever may happen in the way of a fall of prices. Nobody heard of any government salaries being lowered during the period of low prices which covered a large part of the last quarter of the nineteenth century. The proper way to deal with the problem is to make advances in salaries promptly, but in a way that makes their continuance explicitly dependent on the level of general prices. The case of college and university professors—other than those in state and municipal institutions—stands in a different category. The endowed college or university has limits set to its expenditure by the income from its invested property; and the consequence has been a lowering of the professor's ability to meet the requirements of his standard of living which has taken on the dimensions of a great public as well as personal evil. In many cases, relief is now in sight, through the great "drives" which are being made, and through the promised aid of the General Education Board. Finally, it ought to be remarked in regard to the salaried classes in general that if prices should ultimately come down, after salaries have been adjusted to the high level, this class will experience a gain which will be a counterpart to the loss they are now suffering. Salaries will be even slower to come down than they were to go up; and their possessors will find themselves automatically in the receipt of a higher real income through the fall of the

prices of those things which go to make up their "living."

Economists have always justly pointed out that in a period of rising prices, brought about by an increase in the volume of money, the rise in wages lags behind that in commodities. The demand for commodities, as measured in terms of money, rises promptly, being the natural vent for the new money at the command of purchasers. Those who had the goods mark them up as soon as it becomes apparent that the supply will not hold out to meet the demand at the old prices; but the raising of wages is a more serious matter. It hangs back for the same kind of reasons (though in a far less degree) as the raising of salaries. However, the impact of the new volume of money during the period of the great war was of a different character from that which takes place in ordinary instances of increase in the volume of money. What happened was not a gradual infiltration of the new money, but a sudden imperative demand for enormously increased production in certain definite directions. That demand took the shape, so far as money is concerned, of vast issues of bonds and notes in Europe and of a great flow of gold and expansion of credits in this country; and it was directed toward a tremendous stimulation of production of munitions and other supplies incident to the prosecution of the war. Accordingly, over a large part of the labor field there was immediately so intense a demand for labor as to bring about amazing increases in rates of wages in the occupations affected. Millions of working people, therefore, have not suffered from "high cost

of living" at all; on the contrary, they have been able to live better than ever before, because their pay has increased more rapidly than prices have risen. This phenomenon—due to a definite cause other than the mere fall in the value of the monetary unit—so far from discrediting the traditional economic view of the matter, actually gives occasion for a confirmation of it. For, in spite of the natural tendency in a rise of wages in one field to raise wages in all, it seems to be thoroughly established by statistics that the average of all wages has even now, at the end of five years, hardly caught up with the rise in the "cost of living."

RECIPIENTS OF PROFIT CAUSED BY RISING PRICES

The case of the independent producer—whether he be farmer or manufacturer, individual or corporation—and of the "business man"—whether he be merchant, or banker, or middleman—is in strong contrast with that of the salaried man or the wage earner. In a time of rapidly rising prices, the man whose income is derived from the profits of production or trade is constantly the gainer by the change of prices. The costs of his business—fixed charges, rents, wages and salaries—are slower to rise than the prices at which he sells his products or which he is able to charge for his share in the process of sale. Moreover, he buys his raw materials, or the wares in which he deals, at the prices of today, while his sales are made at the advanced prices of, say, six months hence. This state of things has always been recognized as being the explanation of the "business prosperity"

which attends a time of rising prices; a prosperity which consists in the business man making exceptional gains at the cost of the classes which, as we have seen, are suffering from the very cause that makes his situation so fortunate. It is idle to rail at this as "profiteering." You cannot keep prices down while money, or what serves the same purposes as money, keeps getting more and more abundant—unless, indeed, you compelled people to keep their money idle, which none of the profiteer-hunters has ever proposed. Moreover, if prices keep rising, business profits are bound to be swollen during the process. It may be wise to impose a special tax upon these profits; that is a separate question. The profits themselves are an inseparable incident of the process of rising prices. A merchant or manufacturer might, indeed, sell his goods at a lower price than the market afforded; but, unless there was a conspiracy of such self-denial covering the whole range of production and trade, the money thus released to the purchaser by one dealer would remain effective to boost the prices which others, either in his own or in other lines, would obtain. The thing is too fantastic to be considered. To be sure, there has been "profiteering" that is reprehensible; in the confusion and turmoil of a period of rapidly changing prices, advantage has been taken of ignorance, of the difficulty of keeping track of prices, of peculiar exigencies which do not reflect real market conditions; but in the main, the great profits that have fallen into the hands of producers—by no means excepting the "honest farmer"—and business men have been

not the result of any wrong practices on their part but the outcome of economic conditions over which they have no control. The spectacle of so many persons growing rich while so many others are reduced to sore straits to keep up a decent standard of living is undeniably offensive to one's sense of justice; but it is idle to indulge in vaporous denunciation of persons who, favored by fortune, have been guilty of no wrong, or to expend upon worse than futile schemes of punitive repression energy which might be directed toward rational consideration of economic policies.

DEFLATION A WORLD-WIDE PROBLEM

Just what may be done with safety, and with a just regard for the rights and interests of all classes, to bring prices down to a lower level is one of the most difficult of all economic questions. Its consideration, even in a superficial way, is beyond the scope of this article. But it is not out of place, perhaps, to say a few words on the subject. The problem, difficult as it is in our own country, is infinitely less difficult than it is in the European nations, in which the gold standard has been abandoned under the stress of war, and which have to consider not only the method, but also the basis of a return to it. All our dollars are as good as gold; but there is a large margin of choice as to the volume of notes and credit which we may maintain upon the gold standard; and the value—the purchasing power—of the gold dollar itself depends upon that volume. Its expansion tends powerfully to lower the value of the dollar, and its contraction to raise it;

a state of things quite other than that which existed in normal times, when the value of the dollar—that is, the value of the gold that is contained in a dollar—was influenced comparatively little by the monetary or banking policy of any one country, the gold standard being common to almost the whole commercial world. A policy of cautious but consistent “deflation” would bring about a gradual lowering of prices. This would correct some of the injustices of the existing situation, which are certainly serious enough to demand correction, if correction is attainable. The great difficulty that must always be borne in mind in the pursuance of such a policy is that the process of falling prices, while perhaps not more painful, is incomparably more dangerous than that of rising prices. Rising prices hurt people as consumers; falling prices hurt them as producers and business men. And unfortunately anything that hurts producers and business men has disastrous consequences far beyond the mere increase of their “cost of living.” If their business shows a loss, or even

a profit much below normal, the consequence may be bankruptcy and is almost sure to be a curtailment of enterprise; in either case we are confronted not only with a lessening of supply, but also with the spread of unemployment, which in turn further lessens the chances of gainful business. Indeed, it should be noted as one of the compensations which wage workers get in a period of rising prices, that in such a period, owing to the prevalence of business prosperity, employment is abundant and steady; and, by the same token, in a period of falling prices there is danger of a large amount of unemployment. All this, however, merely emphasizes the necessity of great caution and of expert skill in the carrying out of any policy of deflation; it does not mean that such a policy, properly safeguarded, should not be undertaken. On the contrary, it is of the first importance to recognize the necessity of such a policy, and of steady though cautious pursuance of it, as the one great means by which government and the banks can bring about some relief from the evils of the “high cost of living.”

Prospective Changes in the Price Level

By E. M. PATTERSON, PH.D.
University of Pennsylvania

FROM 1850 to 1914 there were three major price movements. During the first period, which extended to 1873, prices rose. This period was followed by a decline in prices from 1873 to 1895. The third period began with an upward trend in 1896 which was still continuing at the outbreak of the European War in 1914. These three movements were not confined to the United States, but were world wide. In every country they started at approximately the same date, progressed at nearly the same rate and came to an end at about the same time. In 1914, the upward movement was still in progress with no indication of a reaction yet visible.

There is no occasion here to discuss the causes of these changes further than to state the somewhat general belief that they were the result of a fluctuating gold production. The discoveries in California, beginning in 1849, gave an annual output that became larger and larger until 1873. Then it declined somewhat for a number of years, only to increase again in the late eighties under the stimulus of new discoveries, and improved methods of extracting the gold from the ore, these changes beginning to have an effect on the price level by 1896.

Another movement began in 1914, and is still continuing at the time this is written. Rapid as was the rise of prices during the eighteen years following 1896, it seems slow when compared

with the changes of the past five or six years. Its causes are amply considered elsewhere in this volume of *The Annals*, and we need only observe that they are a combination of large issues of paper money by banks and governments, an increase of the deposit liabilities of the banks and a considerable scarcity of many kinds of commodities.

CONSEQUENCES OF PRICE CHANGES

These various changes have had serious consequences. During the period from 1873 to 1895 there was great hardship among those groups who had obligated themselves to pay each year fixed sums of money, but whose receipts from products sold were constantly less as prices fell. Imagine a farmer who had assumed a \$10,000 mortgage in 1870, expecting to pay it off at the end of ten years and maintain interest obligations in the interval. In 1873, prices began to fall, and as the years passed the farmer received less per bushel for his products. Larger and larger quantities of grain were needed to meet the interest on his mortgage and to accumulate a sinking fund with which to pay the principal.

In this same period, creditors were constantly better off. Receiving each year fixed sums of money, they could buy more and more commodities as prices fell. As they were not experiencing any hardship they did not complain and even found it hard to

sympathize with the farmer and other debtors. Since the people of the west and the south were predominantly debtors in this period, it is not surprising to discover that they anxiously sought for a remedy. Rightly or wrongly, they thought it would be found in an increased volume of circulating medium and urged that such increases be secured by issues of government paper and by a return to bimetallism.

In the north and east, there were fewer debtors, but more creditors who owned bonds and mortgages on the properties of the south and west. These creditors, whose status was constantly improving through the fall in prices, were quite content with the situation and opposed to the demands of the bimetallists. For about twenty years, the two groups struggled for supremacy, the climax coming in the victory of McKinley over Bryan in the presidential campaign of 1896. After that date conditions were reversed; prices rose and debtors ceased to feel the pressure which was shifted to those classes in the country who were the recipients of relatively fixed incomes—wage earners, the salaried groups and those who were living on the incomes from their investments. The hardships of these groups were serious prior to 1914, but since that time have become even more acute.

Just how great this change has been in the United States is indicated by the index numbers of the United States Bureau of Labor. Accepting the price levels of 1913 as our starting point or 100, the increase of wholesale commodity prices was to 248, and of retail food prices to 201 for January, 1920. Prices of these commodities

are thus from two to two and one-half times as high as in 1913. These increases actually did not begin (in the United States) until September, 1915, when the level was about the same as in January, 1913.

HIGH AND LOW VERSUS RISING AND FALLING PRICES

Before passing to an analysis of the situation now confronting the world, it is important to point out that there is no special reason for concern over either high prices or low prices. High and low in any connection are merely relative terms, and are used here only to compare prices at a given time with those at some other time. If some level—high or low or intermediate as compared with the past—could be accepted and retained our troubles would be lessened. After a time, those prices, wages and salaries which were distinctly out of line would adjust themselves to the adopted level. Neither high prices nor low prices are a cause for concern. Rising prices and falling prices cause the trouble and stabilization is the important thing.

STABILIZATION OF PRICES

There are several alternatives before the world at present. As usual, one possibility is to do nothing, to let matters drift. Of course, by doing nothing one actually decides to face the results of certain very definite tendencies, but the activity of numerous propagandists indicates an unwillingness to take a *laissez-faire* attitude. Let us then suppose that it is actually possible for us to exercise conscious control over price movements. Let us further assume that it is our plan to

accept some price level as suitable, to adjust prices accordingly and then attempt to stabilize prices at this level. What level would we approve and what arguments could be advanced in its favor?

Positive suggestions divide themselves into two groups: one set of arguments being advanced to support the idea that the present price level should be maintained, the other that it should be lowered.

Much may be said in favor of checking any further rise in prices and of maintaining them as near the present level as possible. As has just been pointed out, high prices are not in themselves objectionable. It is changing prices that are troublesome. Why not stabilize at the present level? Or even if one doubts the possibility of stabilization, why not at least avoid any great amount of deflation? Such a policy, if practicable, would save us from the difficulties that there are in falling prices, in the transition from our present level to a lower one. Such a fall would repeat the hardships of the period from 1873 to 1895, and would perhaps be even worse, especially if the new level is to be much lower than the present one and to be attained in a short period of time. Why not endeavor to hold the present level? After a time, those prices and incomes which have lagged behind during the upward trend will catch up and with far less hardship in the community than would accompany falling prices.

This view is supported by our consideration for those who have been forced to borrow at the high price level. If prices now fall, they will suffer precisely as did the farmer who

had mortgaged his farm at the high price level prevailing prior to 1873. In the last few years, both individuals and corporations have borrowed heavily. If the price level declines some of their expenses, as those for wages and raw materials, may go down, but not their obligations to repay fixed sums with interest at a fixed rate until maturity.

But the situation is worse than in 1873. Prices are much higher than at that date and if the return is to a level at all near that of 1914, the hardship will be very great. Moreover, there has entered into the situation a serious complication in the form of a mass of government obligations. The increase in the public debts of the principal belligerents during the war was over \$200,000,000,000 with an addition to their annual debt charges of over \$8,000,000,000. Nor does this include the new debts of any but the central governments. States, municipalities and other political divisions are not included nor are the debts of neutral countries.

What would be the effect on these governments of a lowered price level? Assume that there is a certain manufacturer of cotton cloth in Great Britain whose appropriate share of the annual tax burden is £10,000. Buying his raw materials and paying wages at the present level means a heavy outlay, but selling at present prices he can pay the £10,000 to the government, although he could not pay a higher tax.

Assume that his selling price falls to 50 per cent of the present level. Make also the unreal assumption that all his expenses will fall correspondingly and that his percentage gain will be

as great as at present. Still it will be less in dollars and he will no longer be able to pay £10,000 per annum. But the government's expenditures for debt service will not go down with the general fall in prices. That charge is for a given amount in pounds sterling and failure to pay it means default. A falling price level will add enormously to the fiscal problems of all the leading governments of the world.

There seem to be strong reasons for endeavoring to maintain the present price level, but there are also serious difficulties. Hard as it would be to descend to a lower scale, there are still many prices not up to the high level of some, while most wages and salaries are still lagging far behind. This lag means suffering and discontent and is probably the chief cause of the current industrial unrest.

Another complication is the great danger that the leading banks may at any time find themselves unable to meet the demands made upon them. Note issues and deposit liabilities have expanded greatly. Although gold holdings have in some banking systems been increased, these gains have not been sufficient to maintain the old reserve ratio. The Bank of England, which formerly kept a reserve of about 45 per cent, now has only about one-half that amount. The Bank of France has fallen from between 50 and 60 per cent to between 10 and 20 per cent, while the Bank of Germany has dropped from nearly 60 per cent to less than 3 per cent. Perhaps the former percentages were in a few cases unnecessarily high, but some of the present ones are dangerously small. If the liabilities are not reduced or the

gold base increased, there is danger of a collapse at any time.

Increasing the gold base is by no means easy. The larger part of the gold in private hands was concentrated in the banks during the war and any amounts still out will be very hard to collect. At the same time, the output from the mines has greatly fallen off. The so-called "price" of gold per ounce is necessarily fixed and is, in the United States, \$20.67 per ounce of pure gold. With this selling price fixed and costs of materials and wages rising, the poorer mines are quickly placed at a disadvantage. Many of them have shut down and the annual output of gold has decreased.

This decline in gold output has led to many suggestions for encouraging the industry. It has been suggested, for example, that the mint price of gold be increased to say \$30 per ounce, a plan that would merely mean coining each ounce into fewer dollars and putting into circulation dollars of lighter weight than before. This would, of course, disturb prices further, driving them still higher than at present. If the weight of the dollars was not decreased the difference of \$10 per ounce would have to be met from the general funds of the treasury and would call for heavier taxation. Subsidies are not usually popular and are apt to be less so when governments are so heavily burdened as at present.

Another proposal is to increase the metallic base behind these note issues and deposits by adding silver to the gold,—in other words, by adopting bimetallism. It is curious to notice the respectful attention given to such a plan in some quarters where, thirty years ago, bimetallism was regarded

as the rankest of heresies. Many who fear a collapse of the credit structure of today will listen sympathetically to a discussion which they would not have endured at that time. As yet the proposal has not taken very concrete form, except for the suggestion of an international conference on the subject. If silver should fall from its present price of from \$1.20 to \$1.30 per ounce, the silver interests would probably become more active in their advocacy of the plan. The difficulties of increasing the metallic base behind these obligations, either with silver or with gold, is so great that a reduction in the obligations themselves seems the more probable.

Still another consideration is the strong popular criticism of high prices. Public opinion is strongly in favor of a reduction. A lowered price level has very definite attractions. Having to pay more than formerly for all purchases one is apt to enthuse over the prospect of a lower level. Hence the popularity of deflation. Most of us do not think that our incomes have gone up as much as the prices of the articles we buy, and contend that we are the losers. Similarly we do not always include our own incomes among the items that will fall if the general price level should be lowered. Those of us who are correct in this view may personally gain from deflation, but those whose incomes fall more rapidly than the prices of other things may lose.

On the whole, the forces that will operate to check the upward movement are the more powerful and a reduction seems certain. With it will

come the customary business failures, unemployment and suffering, complicated by increasing difficulties for governments who will find it harder and harder to meet their obligations. The longer the ordeal is postponed, the worse it will be when it comes. The higher we mount the farther we shall fall and the greater the disaster. Stabilization of prices at some level is perhaps the most important problem facing us for solution. Whether it is feasible may be open to argument but in any case, stabilization at the present level is unwise and impossible.

This does not mean a return at once to the pre-war level. Since 1914 numerous changes, many of which are permanent, have occurred. In England the gold coins have been concentrated in the banks, their place in the circulation being taken chiefly by the currency notes. In the United States a similar change has occurred, the gold coins and gold certificates having been collected by the Federal reserve banks. Federal reserve notes and federal reserve bank notes have taken their place. Paper money issued by governments and by banks has displaced the gold and the public seems to be reconciled to the change. The volume of paper money is doubtless too large at present but each dollar of gold in the vaults of the banks will support several times its face value of paper money and deposits. The net result will be a larger volume of circulating medium than before and in the absence of a greatly increased production we may expect a price level higher than that before the war although not so high as at present.

Movement of Wholesale Prices in Various Countries¹ During and Since the War

By LEIFUR MAGNUSSON

Bureau of Labor Statistics, United States Department of Labor

IN the following table the more important index numbers of wholesale prices in the United States and several foreign countries, as compiled by recognized authorities, have been reduced to a common base in order that the trend of prices in the several countries may be directly compared. The results here shown have been obtained by merely shifting the base for each series of index numbers to the year 1913, *i.e.*, by dividing the index for 1913 on the original base into the index for each year or month on that base. These results are therefore to be regarded only as approximations of the correct index numbers in the case of series constructed by averaging the relative prices of individual commodities. This applies to the index numbers of the *Annalist*, the *Economist*, the *Statist* (Sauerbeck), the Department of Labor of Canada, the *Statistique Générale* of France, and, presumably, the *Monthly Statistical Bulletin* of New South Wales, Australia. The index numbers of the U. S. Bureau of Labor Statistics, Bradstreet, Dun, Gibson, and the Bureau of Census and Statistics of Australia are built on aggregates of actual money prices, or relatives made from such aggregates of actual prices, and therefore can be readily shifted to any desired base. In cases where no index numbers for years are shown in the original sources, the figures here presented

¹The original data on which the tables here presented are based, together with the text explanation of the basis on which these percentages are computed, are published in the *Monthly Labor Review* of the United States Bureau of Labor Statistics, March, 1920, pp. 65-67. For a fuller discussion of the basic data underlying these index numbers reference is made to *Bulletins* Nos. 173 and 181 of the United States Bureau of Labor Statistics. The figures here shown bring the index numbers up to the latest available month. The Italian index of Professor Bacchi has also been added to those shown by the Bureau of Labor Statistics.

have been obtained by averaging the twelve monthly index numbers.

OBSERVATIONS

(1) All the indexes show phenomenal increases in prices between 1914 and 1918, and where the figures are shown there is a further increase in 1919.

(2) Four of the twelve indexes indicate a slight decline in 1914 over 1913, and three show no change, *i.e.*, over half demonstrate no increase in prices in 1914 over 1913.

(3) The increases by quarters and months during 1915 up to the end of 1918 are both significant in amount and steady, generally reaching the maximum in October, 1918.

(4) The winter of 1918-19 shows a rather unsteady movement, but no tendency toward a definite recession of prices.

(5) All the indexes climbed to new high levels during the past winter, the French and Italian indexes leading all others both then and in former years.

(6) Between February and March of this year there have been further increases, changes or decreases. Bradstreet's index alone shows a decrease which may indicate the beginning of a slight though general decrease. It is not unlikely that the peak of prices has been reached and that a recession may be looked for during the forthcoming months.

WHOLESALE PRICES IN THE UNITED STATES AND CERTAIN FOREIGN COUNTRIES

[Index numbers expressed as percentages of the index number for 1913. See text explanation.]

Year and month	United States					United Kingdom		Canada	Australia		France	Italy
	Bureau of Labor Statistics: 328 commodities (variable)	Annalist: 25 commodities	Bradstreet: 96 commodities	Dun: 200 commodities	Gibson: 22 commodities	Economist: 44 commodities	Statist (Sauerbeck): 45 commodities	Department of Labor: 272 commodities (variable)	Commonwealth Bureau of Census and Statistics: 92 commodities	New South Wales Monthly Statistical Bulletin: Number of commodities not shown	Statistique Générale: 45 commodities	Bacchi index number
1890.....	81	78	.....	175	75	83	85	81	97	.....	.....	.....
1895.....	70	68	70	167	72	72	73	71	70	.....	.....	.....
1900.....	80	71	86	77	76	90	88	80	82	.....	.....	.....
1905.....	85	79	88	83	81	84	85	84	84	84	85	.....
1910.....	99	98	98	98	102	93	92	92	92	88	93	.....
1913.....	100	100	100	100	100	100	100	100	100	100	100	100
1914.....	100	104	97	101	105	99	100	100	106	95	102	95
1915.....	101	106	107	105	110	123	127	110	147	114	140	133
1916.....	124	126	128	123	129	160	160	134	138	137	188	200
1917.....	176	187	170	169	191	204	205	174	153	153	262	306
1918.....	196	205	203	190	211	225	226	205	.....	162	339	409
1919.....	212	211	203	190	209	235	242	216	.....	.....	357	.....
1914												
January.....	100	102	97	103	100	97	98	101	100	98	100	.....
April.....	98	101	95	99	99	96	96	101	102	102	100	.....
July.....	100	104	94	99	101	95	104	99	109	101	101	.....
October.....	99	107	100	102	108	101	106	102	113	95	107	.....
1915												
January.....	99	108	99	103	111	112	118	103	127	101	124	105
April.....	100	109	106	103	117	124	125	108	153	109	135	121
July.....	101	105	107	103	111	122	126	111	167	115	142	130
October.....	101	101	108	105	103	125	134	112	142	117	158	148
1916												
January.....	110	110	119	114	113	143	149	127	138	123	179	184
April.....	117	118	128	121	123	156	157	132	137	137	190	201
July.....	119	121	125	120	124	156	157	132	138	134	186	193
October.....	134	136	131	126	141	171	175	138	139	140	198	207
1917												
January.....	151	151	149	140	150	184	187	154	140	150	215	230
February.....	156	159	151	146	156	188	193	160	.....	151	225	.....
March.....	161	170	154	154	166	197	199	163	.....	151	230	.....
April.....	172	188	158	157	188	200	203	169	146	150	248	265
May.....	182	203	164	172	204	200	205	177	.....	153	256	.....
June.....	185	198	168	176	197	210	211	179	.....	152	266	.....
July.....	186	189	175	175	200	208	208	179	158	152	268	304
August.....	185	190	178	181	203	210	207	181	.....	156	270	.....
September.....	183	195	181	178	206	209	207	179	.....	152	280	.....
October.....	181	200	184	182	207	212	212	179	166	147	284	351
November.....	183	199	185	183	206	215	214	183	.....	163	293	.....
December.....	182	200	191	182	209	215	218	187	.....	166	304	.....
1918												
January.....	185	200	195	184	205	215	219	190	173	161	313	363
February.....	186	204	196	188	210	216	220	194	.....	165	315	.....
March.....	187	204	196	189	217	218	222	199	.....	156	329	.....
April.....	190	207	200	191	225	221	223	199	178	155	337	401
May.....	190	207	205	188	216	223	225	204	.....	164	333	.....
June.....	193	201	206	186	211	227	226	207	.....	163	332	.....
July.....	198	203	208	192	212	228	227	210	180	160	333	429
August.....	202	207	208	192	210	233	230	210	.....	170	350	432
September.....	207	210	207	193	212	231	232	211	.....	164	355	433
October.....	204	203	207	193	205	231	233	214	181	160	360	442
November.....	206	205	205	191	204	231	230	215	.....	159	358	438
December.....	206	208	207	191	208	226	231	213	.....	163	353	372
1919												
January.....	203	211	201	190	206	217	224	211	177	160	348	328
February.....	197	201	192	182	201	216	221	206	151	151	340	323
March.....	201	209	187	180	212	212	217	205	153	157	337	326
April.....	203	223	188	182	223	214	217	206	.....	150	332	330
May.....	207	226	187	184	220	222	229	210	156	157	335	337
June.....	207	216	196	189	220	220	230	210	157	168	330	355
July.....	218	219	205	193	220	240	243	217	158	.....	349	359
August.....	226	220	217	200	218	242	250	222	158	.....	347	367
September.....	220	202	211	197	201	245	253	223	158	.....	360	369
October.....	223	200	212	195	191	252	264	221	.....	.....	384	387
November.....	230	201	216	191	197	259	272	227	.....	.....	407	435
December.....	238	205	219	202	206	273	277	239	.....	.....	417	.....
1920												
January.....	248	210	221	204	224	289	288	251	.....	.....	.....	.....
February.....	249	208	227	209	219	303	.....	254	.....	.....	.....	.....
March.....	253	213	226	209	230	.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	213	.....	.....	.....	.....	.....	.....	.....	.....

¹ Average for January and July.² Quarter beginning in specified month.

The Prices of Today

By J. S. CRUTCHFIELD

President, American Fruit Growers, Pittsburg, Pa.

THE tremendous agitation, excitement and anger with reference to present day prices of labor and food, particularly, does not indicate a high degree of capacity on the part of the government, capital or labor to deal wisely with this problem which must, of necessity, now be most complicated.

The whole price structure on all commodities and labor has been destroyed by the war and we must patiently, by slow and painful process, build a new and better foundation for a price structure which must stand the most violent storms conceivable.

"Necessity is the mother of invention." "What can't be cured must be endured."

The chaotic condition of trade and of all human affairs demands the exhibition of the highest degree of composure, skill, intelligence and resourcefulness of all elements of society, and a recognition of the unity of the human family in all of its inter-relationships.

PRICES IN NORMAL TIMES

Under normal conditions there are periods of years when prices favor the consumer. The producer, in such periods, frequently sells his products at less than cost of production. These conditions prevailed for several years culminating in 1896. At that time, in perishable foods, prices were far below cost of production. No. 1 apples sold in the market for \$1.00 per barrel; potatoes, 25 cents per bushel. This

was the consumers' inning but he did not feel especially favored.

Naturally, the above conditions had a tendency to discourage production in the lines affected and as a natural sequence such periods were followed by seasons of shorter production and higher prices.

The Law of Averages

Those producers who are sensible enough to keep up the same acreage, year after year, in the line of production to which their soil and climate are best adapted begin to profit at the expense of the vacillating type of farmer who fluctuates his acreage, trying to hit the high market.

The natural reaction of increased price is to increase production and decrease or shift the demand, and normally the scales go up and down within the five-year period, or certainly the decade period, turning out a *fair average* profit to the producer and a *fair average cost of living* to the consumer.

While the large mass of producers and consumers find price fluctuations a great hardship, even though the average price over a five-year period may be reasonably fair to each, such price fluctuations seems to be unavoidable. Weather conditions, however, make impossible, especially in the line of fresh fruits and vegetables, the avoidance of quite sudden and sharp fluctuations in supply and demand and, consequently, in price. The extensive use of cold and dry storage, the stand-

ardization of grades and packages, the organization of producers and consumers all tend toward stabilization of prices and benefit both producer and consumer. Certainly, every possible and practicable means should be used to stabilize the market for the protection of both producer and consumer. These fluctuations train the human race to a certain amount of foresightedness and prudence in the conduct of their lives.

PRICES IN ABNORMAL TIMES

All of the above refers to a *normal* fluctuation of prices and profits and consumer costs in *normal* times, whereas what we face today is the most abnormal time in the history of the human race—a time of great scarcity of production and great need of production; a time when the whole economic life of the world has been turned upside down; a time when new standards and new ideas must be adopted to meet such a changed condition. No one knows and no one can know what the right basis of price or wage is, and it will take several years to ascertain this; meanwhile, it is not altogether undesirable that these matters be the subject of the most intense thought, discussion, and dickering, between so-called capital and labor—producer and consumer.

The next decade is bound to be a period of adaptation and adjustment in all of these matters, and it ought to be an opportunity for great beneficial changes. The very thing that we are crying about may prove really a blessing in disguise, and not in very much of a disguise either to persons who will think deeply on the subject and act wisely.

Need for Experiment

The only thing that will cure some of the ills of the human race today, that is, ills of mind especially, is a little experimenting. So far as the *United States* is concerned, it never was in better shape to stand a little experimenting.

We have a safe and sane *majority* that are not going to allow anything *very bad* to prevail *very long*. That portion of the population who insist upon trying some new doctrines might well be given the opportunity now in order to show up the fallacy of the false doctrines and to get back, in a reasonable length of time to—not the old standard—but to a much higher plane of living and of doing business.

A high price and wage level and a more stabilized market is the only possible thing that will stimulate production quickly enough to save the world from actual want or starvation.

Effect of High Prices on Foodstuffs

In the *Journal of Commerce* of March 23, 1920, Italian Premier Nitte is quoted as saying: "More than three hundred million workers have ceased producing the necessities of life throughout the world." The present high range of price is the only thing that will force people, who are now in non-productive enterprises, into actual food production. The only way to help the clerks, as a class, is to thin them out. A lot of able-bodied clerks should be in more productive lines. More city dwellers should be living in the country or suburban districts where they can become producers. Nothing is going to bring about this needed reform in the life of a nation excepting the force and pressure of high priced foodstuffs.

Another very practical thought which should be immediately considered by the real sufferers and complainants: the present high range of prices on many foods is the only thing that will *force* people to study actual food values and to change their diets, utilizing those more plentiful food-stuffs which can be produced and bought more cheaply. At this time the wise provider and the intelligent buyer can actually live for one-fourth to one-half the cost of the improvident and unwise, and live almost as well. A study of the whole subject of food values, and dietetics in general, is greatly needed.

There is no up-to-date farmer today who does not understand how to feed his hogs and stock. In mastering this subject he must not only bear in mind the *cost* of his feed, but also the diet must be properly balanced, and, more than that, it must be appetizing, because even hogs will not eat and thrive on what they don't like. If the American public will get busy they can afford themselves some immediate relief along the line suggested, and if they will think more deeply perhaps certain benefits may be derived to compensate for the hardships of the present price level.

One thing is sure; we are not going to affect the cost of living *very much* by legislation, although it is a subject well

worthy of the intensive study and wise action by our legislators.

Methods for Lowering High Food Prices

In the main, however, there will be found three fundamental remedies: first, elimination of waste; second, increased production; third, more discriminate buying and use of food.

THE CONSUMER THE PRICE FIXER

Who fixes the price? Not the producer; not the wholesale middleman; not the retailer. The consumer has the *power to fix the price*. If he does not exercise it, to a reasonable extent at least, it is his own fault and probably due to a lack of realization that the remedy is largely in his own possession.

The people of this nation are suffering from the chronic habit of eating what they want regardless of adapting themselves daily to what the market affords. Last year, during the months of May and June, old potatoes sold for considerably less than the cost of production; now they are selling at high prices. Everybody seems to want them now. No one seemed to want them then.

Let the American public wake up! The Lord will cooperate with those who will help themselves and living costs will not be so much out of line.

Present Day Prices

By HOWARD E. FIGG

Assistant Attorney-General, United States Department of Justice

OUR greatest post-war problem is undeniably the high cost of living. Its solution presents an even greater problem. Before those of us who would attempt a solution is arrayed a complication of conditions, appalling in their magnitude. It is evident after a careful consideration of all of these conditions that time—in this case as in many others—will be the solvent of our national puzzle. Only through gradual adjustment to the economic standards of former days can equilibrium be attained.

It is a concurrent opinion, however, that a safe and sane adjustment may be directed through a proper realization of the significance of prevalent conditions. Further than this no predictions can be forthcoming. The outcome rests with the people themselves, with their realization of responsibility and their understanding of the influence of individual action upon the general surface of affairs.

Our first duty is to understand thoroughly the facts in the case. The prices of things that enter into our daily lives are nearly twice as much as they were before the war. In England they are three times as much and in Germany and Russia still higher.

This means that, pending adjustment to new conditions, a great hardship falls upon all of us. Those of us who are dependent upon salaries have found, to some extent, a remedy in an increase of pay. This increase, on the other hand, is immediately reflected

in the cost of living. We find ourselves, therefore, getting nowhere by such tactics except to the point where industrial disaster stares us straight in the face. We realize that we cannot indefinitely continue to raise both wages and living cost. The time has arrived when we must stop the operation of such a vicious circle. The plea now is to ask the patriotic people of America to halt in their desires to better their own conditions selfishly and to consider the interests of everyone; to hold the line steady until the economic forces begin to operate, production increases and the normal law of supply and demand becomes operative.

CAUSES FOR THE HIGH COST OF LIVING

Getting at the root of the matter, it is evident that the chief causes for the high cost of living are decreased production incident to the war, inflated currency due to government borrowings, and heavy taxes which are passed on by business men to the ultimate consumer.

SOLUTION OF THE HIGH COST OF LIVING

Increased Production versus Decreased Consumption

Working with these truths as a basis, the solution of the problem then appears to simmer down to a very simple explanation—produce more or consume less. The law of supply and demand is now, and always will

be, the sole cause and regulator of commercial value. If production cannot be increased rapidly enough to overtake the unprecedented demand, then demand must be curtailed until supply has been given a chance. The need for increased production is shown on every hand and in every line of business.

The Department of Justice has advocated from the very start the necessity for stimulation of production. Instead of shirking and slackening our efforts, how vastly better it is for the country, for the world and for our own individual selves to roll up our sleeves and tackle the proposition of restocking the world.

Recognizing this then, our path lies straight before us. Awaiting the realization of our aims, however, the question of control of prices presents itself for consideration and its answer seems a likely alleviation for besetting conditions.

PRICE CONTROL

My own view is, and I believe it can be substantiated from five years of food control all over the world, that until shipping, credits and production become normal there is no effective control of the cost of living that can be set up which is not based on an absolute control of prices and distribution of the great underlying staple commodities.

By this I do not mean price fixing of those commodities, but price stabilization through provision for proper storage of surpluses in the flush season, through control of exports, imports, foreign buying and conditions of credits to foreign nations in such manner as to protect both consumer and farmer.

The control of the middle man and the elimination of speculation in such circumstances is not insuperable, because the margins which should be charged by such trade in the steps of distribution can be determined, and, with a knowledge of the basic price, their conduct can be constantly checked in the public markets by a mere price inquiry and advertisement to the public. This basic system was, of course, destroyed when the government took down the export control and dissolved the Food Administration.

The removal of these safeguards and the vast world speculation in anticipation of the removal of the blockade against central Europe has produced a sickening rise in prices and a lot of profiteering. This is of two sorts. First, vicious speculation for rise in price, and second, the tendency of the whole world to protective buying.

Our weapon against this state of affairs is the enforcement of the Lever Act by the Department of Justice. In the middle of August, the department inaugurated a campaign to discover and prosecute violators of the Food Control Act. Section 6 of the act provided a penalty for hoarding and Section 7 authorized the seizure and sale of hoarded necessities. Eleven hundred and seventy-six prosecutions have been instituted under all sections. In all, sentences have been imposed in 107 cases. The sentences have ranged from five months in jail and \$5,000 fine to small fines.

The educational and constructive organization of the Department of Justice which now operates in the direction of controlling prices, is the High Cost of Living Division. Its

field organization is comprised of state fair price commissioners, who have authority to appoint such committees in cities, towns or counties to determine upon fair prices or fair margins of profit to be allowed on the necessities of life.

The fixing of these prices or margins is not arbitrarily done, but only after full consideration of business interests, and their active coöperation is encouraged by the fair price commissioner at all times. Where possible, the different business and trade interests in a community are represented on those fair price committees.

No one element alone will reduce the present high prices, but by a full coöperation of all elements and by constructive policies being determined upon by the different interests and put into effect by the Department of Justice through its duly organized agents, there is reason to believe that we may anticipate material reductions on certain of the necessities of life in reasonable time.

Our government or any agency of the government cannot singly accomplish the desired results, but by a complete coöperation of the public, labor and business interests, we may anticipate an early reduction in prices. There should be an organization of fair price committees in every city and county backed by the mayors and prosecuting attorneys with the support of the United States attorneys.

ECONOMIC SITUATION IN THE UNITED STATES

Supplementing these definite activities, the department is attempting to bring home to individuals a proper understanding of the economic situa-

tion prevailing in the country. Recognizing the value of concerted action on the part of all, the department is endeavoring to set the situation frankly before the people.

The Price Level

The first thing we believe that people need to do to approach such understanding is to adjust themselves to the price level approximately double the pre-war basis, with no tendency to fall, and considering only our pre-war debt (which would be doubled in commodities and labor if prices fell to pre-war level) the hardship of pre-war creditors must be forgotten.

Under-Paid and Over-Paid Labor

Secondly, people must coöperate in establishing a wage scale commensurate with the cost of decent living conditions. If there is to be contentment in the nation, labor must be neither under-paid nor over-paid. In certain industries now, wages are much higher than the standard necessary to meet fair living expense, and in these industries they will have to come down to a reasonable level. Where labor is much over-paid the commodity which it produces will be priced exorbitantly to the buying public. Where it is under-paid it will be a source of weakness to the nation.

Necessity for Increased Production

Thirdly, people must be educated into the confident knowledge that with a price level insured against falling we may and must increase our rate of production in order to raise our scale of living. For even with the equitable division of the joint products of our labor that will naturally come under a condition of full employment,

we cannot escape the fact that the sum total of our products is all that can be divided. If we produce much we will divide much; if we produce little we will divide little and live poorly.

Stable Average Prices

Lastly, we must consider very carefully and treat more drastically than ever the conspiracies that seek to control the price of any products, or of the labor that enters into its production. The absolute assurance of stable average price which is now set up for years to come makes possible the full employment of all our peoples all the time they wish to work, and an equitable distribution of the fruits of our efforts can only be assured by full and free competition in every department of activity.

The exercise of individual initiative must be encouraged and monopoly in every form must be prohibited. When and wherever an activity is necessarily monopolistic, as in public utilities, they must be publicly owned and operated. Wise statesmanship will take this view and wise citizenship will sustain it. A period of human progress is at hand and the sooner we adjust ourselves to it the better.

Our recognition of the right of labor to live better than it has ever lived before and our determination to continue our economic condition in which the demand for labor will always equal or exceed the supply will emancipate labor the world over, and eliminate the well-meant but ill-advised efforts of organized labor physically to fight or coerce its way to justice.

We should appreciate the efforts of employes as well as employers to organize for the purpose of studying the great questions that concern them, for a lack of knowledge is at the bottom of all our trouble. But we live as a nation; as a nation we will suffer if they are allowed physically to fight or angrily to intrigue for supremacy, or to monopolize their products and profiteer at the expense of the country.

The Great Seal of the United States bears a prophecy that is now to be fulfilled, *Annui coeptis novus ordo seclorum*—"The things accomplished promise a new order for the ages." A new era is at hand in which intelligent and honest investigation and the application of the Golden Rule to human disputes shall take the place of force and intrigue and to this nation the world is looking for the initiative.

American Control Over War Prices

By PAUL WILLARD GARRETT

American International Corporation, New York, N. Y.

THE task of controlling commodity prices in the United States during the war was a more simple one, though surrounded with difficulties, than was presented abroad, because it began later and after prices had risen relatively higher. Any comparison of government price regulation here with that in Europe, therefore, would seem a less precise measure of how effective our control was than an intensive analysis simply of what we did.¹

THE WAR AND GOVERNMENT PRICE CONTROL

Commodity prices in the United States moved free from government interference during the war, so long as this country was at peace, and by March, 1917, had already risen 56 per cent above their pre-war level. There was no serious thought of price control during April, when the declaration of war sent the weighted "all commodities" index number 14 points higher within the month. The government was not as ready to bring war prices under control as some Allies had been, even during spring as advances continued, in part because there was not here the same dire necessity. The main concern during our first five months of war, and long afterward as

regulation got under way, was to assure adequate production of war commodities and to make government purchases at prices which would encourage production, without allowing excessive profits. The pioneer work of the Council of National Defense during the spring and summer of 1917, therefore, before the Food Administration, Fuel Administration, War Industries Board and War Trade Board had become separate bodies, was directed largely and simply to the surveying of government needs and making purchases. There was little thought then of fixing prices generally to the public.

The entrance of our government into the market for goods, however, at a time when the country was largely under contract to Allied governments, sent prices upward by leaps and bounds, until it became clear that the government must fix prices for its own protection. Our total exports to Europe, measured by values, during the fiscal year 1917 had trebled over pre-war exports. The 1917 frenzied demand here for wheat, intensified by the hunger of the Allies and their inability to make the larger hauls from India, South America and Australia, came when our crop was the smallest in six years. The United Kingdom, which ordinarily imports 70 per cent of her sugar from Germany and Austria, was obliged suddenly to turn here, and our sugar exports to her mounted from 66 million pounds in

¹The data for this review are taken very largely from *Government Control over Prices* by Paul Willard Garrett, and may be had in fuller form from that volume in a "History of Prices during the War" by Wesley C. Mitchell.

1913 to 1,685 by 1916, an increase of 2453 per cent. Metal prices had a runaway market and were carried by July, 1917, to peaks unknown before. The weighted index number for the whole metals group, taking 1913 as equal to 100, jumped from 247 in March, the month before war, to 333 in July. Individual metal series, of course, made even more serious rises. Basic pig iron, f. o. b. Mahoning or Shenango Valley furnaces, climbed from \$32.25 to \$52.50 in the same months, and steel plates, tank at Pittsburgh, from \$4.33 to \$9.00, nearly 800 per cent above the pre-war quotation. The very important food group index swung upward between March and July from 142 to 167, and the fuels index, in which a variation is of only less general consequence than in the food group, rose from 131 to 168. The final upward swing of various price groups from March, when we were just entering the war, to July, when the necessity for action became unmistakable, is here represented by the Price Section weighted index numbers of 1,366 commodity series.

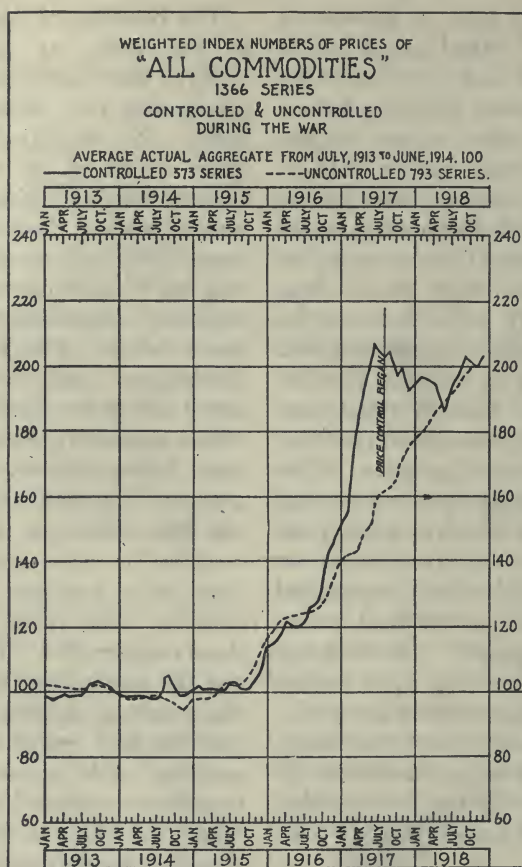
The behavior of commodity prices in the main, as the government brought them under control group by group, was very different from that before. No statistical device, it is clear, can be set up to measure what further heights prices would have reached had not the government interfered. It is only possible to look back and say what happened after control began by comparison with what happened before. The Price Section at Washington made two exceedingly useful devices by which to measure the effects of control upon its "all commodities" index number, and the major groups. The first of these devices was the separation of its "all commodities," seven groups and fifty class index numbers of 1,366 commodities, into those controlled and those uncontrolled. The other device was the construction of corresponding chain indices, showing the percentage variation each month from the month previous, made by taking commodities from the uncontrolled index and putting them into the controlled index each month as regulation was extended.

	All Com- modities	Food	Cloth- ing	Rubber, Paper, Fibres	Metals	Fuels	Bldg. Mat'ls	Chem- icals
1913-14.....	100	100	100	100	100	100	100	100
March, 1917....	156	142	157	143	247	131	132	159
July, 1917.....	189	167	187	144	333	168	155	180

Although the government from the outset was willing that prices advance high enough beyond previous levels to encourage an extraordinary production, these extreme fluctuations forced it formally to interfere late in the summer of 1917.

INDEX NUMBERS OF CONTROLLED AND UNCONTROLLED PRICES

The Price Section index number was, presumably, the best measure of war prices that had been used in this country and had the advantage of a larger number of significant classes.

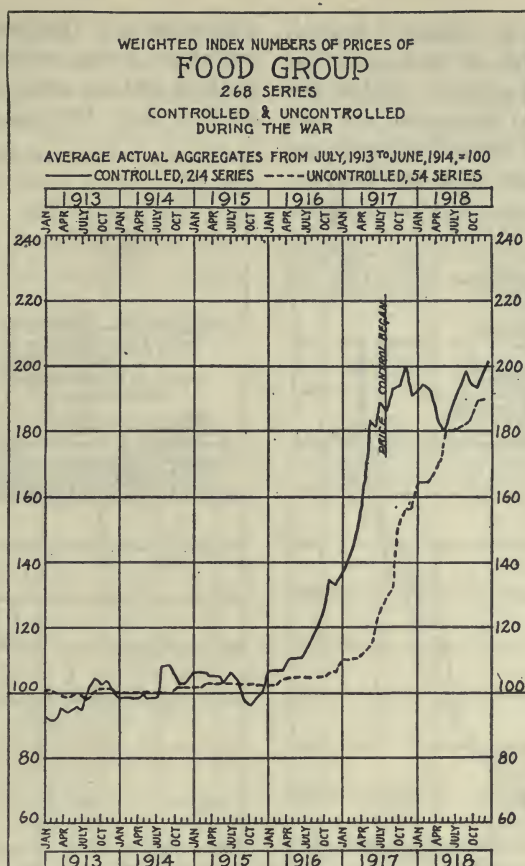


Weighted Index Numbers of Prices.—"All commodities" (1,366 series) controlled and uncontrolled during the war. By months, January, 1913, to December, 1918. (Average actual aggregates, July, 1913, to June, 1914=100.) (Controlled, 573 series; uncontrolled, 793 series.)

Its series were, so to speak, laid upon a table and separated into the 573 commodities which sometime came under control during the war and the 793 which did not. It is true that none of the commodities in the so-called controlled list were actually controlled before the summer of 1917, and some not until 1918. One important factor in the comparison, however, is the relative rises above pre-war levels at which each group stood

when control began and afterward—which can only be had by the index number method.

Price Section Index.—The general price level, as represented by the weighted "all commodities" index, stood at 187 in August, 1917, when control began. It is significant, however, that when separated the August index for the 573 commodities which the government then began controlling stood at 204, and that for the remain-



Weighted Index Numbers of Prices.—Food group (268 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914 = 100.) (Controlled, 214 series; uncontrolled, 54 series.)

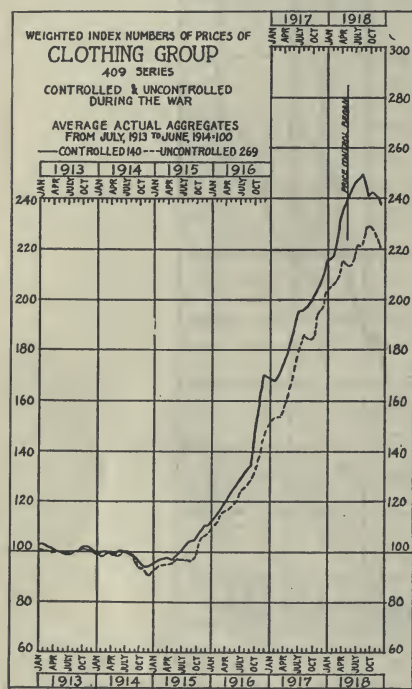
ing 793 at only 162. After control set in, the index of the 793 uncontrolled commodities continued steadily upward, while the index of the 573 controlled commodities fell and never again during the war reached its midsummer 1917 point.

Food Commodities.—Prices of food commodities generally, with the exception of wheat, were not fixed but regulated by various rules stipulating maximum margins of profit and con-

ditions of sale. The extension of this control, moreover, was a gradual thing, although by the time the armistice was signed virtually all important foods were under some form of license. It is noteworthy that the 214 representative series of controlled foods, beginning in the fall of 1917 after the Food Administration got well organized, fell from 200 to 179 by June, 1918, although larger demands then forced the index up again.

Clothing.—It is difficult, indeed, from a separation of controlled and uncontrolled commodities within the clothing group, to distinguish any perceptible effect of control. Cotton and wool manufactures bear the heaviest weights in the controlled list, and raw

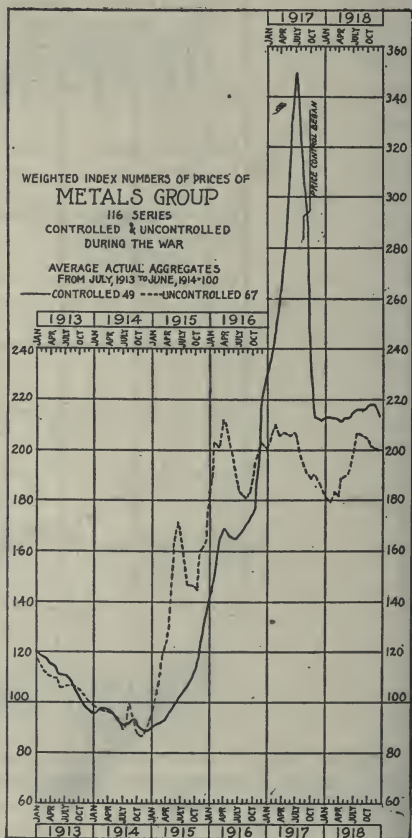
metals group. The index of 49 representative metals controlled reached a peak at 350 per cent of their pre-war level by July, 1917, as compared with



Weighted Index Numbers of Prices.—Clothing group (409 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914=100.) (Controlled, 140 series; uncontrolled, 269 series.)

cotton in the uncontrolled list. There was no government interference, however, until the spring of 1918 and the behavior of the controlled and uncontrolled groups thereafter, as theretofore, was strikingly similar.

Metals.—Scarcely another group shows so clear and immediate an effect of control upon market prices, as the



Weighted Index Numbers of Prices.—Metals group (116 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914=100.) (Controlled, 49 series; uncontrolled, 67 series.)

only 205 for other metals. A decline began shortly before formal interference, in anticipation of control, and the index was brought down to 212 by November. Metal prices, as reflected by the index, were held within a few points of that stable level all during

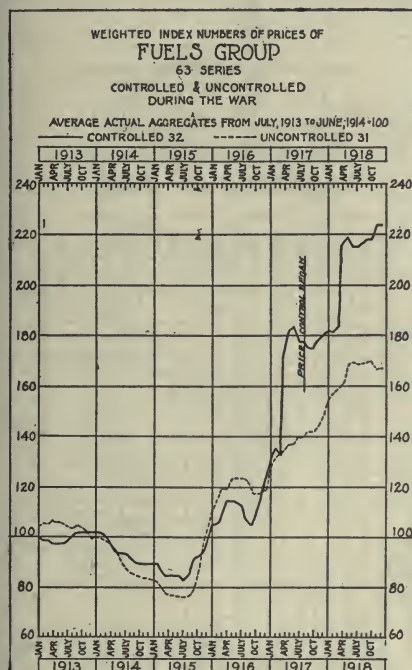
the war. The index of uncontrolled metals, it must be said, shows a remarkably sympathetic movement with the controlled index.

Building Material.—Control within the building material group, although begun in the fall of 1917, and at a time when building material prices stood only 59 per cent above pre-war level as

general movement, however, after control began and the government regulated supply, was downward.

CHAIN INDICES OF CONTROLLED AND UNCONTROLLED PRICES

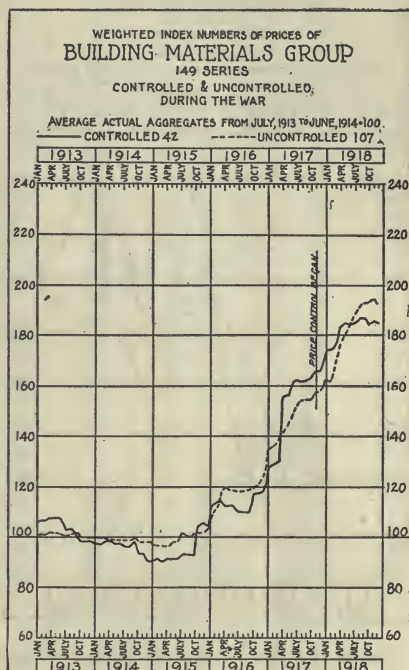
The above separation of the Price Section index number into commodities controlled and those uncontrolled,



Weighted Index Numbers of Prices.—Fuels group (63 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914=100.) (Controlled, 32 series; uncontrolled, 31 series.)

compared with 83 for the general price level, does not appear greatly to have reduced prices.

Chemicals.—Fluctuations within the group of chemicals later controlled were more violent than those of other chemicals all during the war. Their

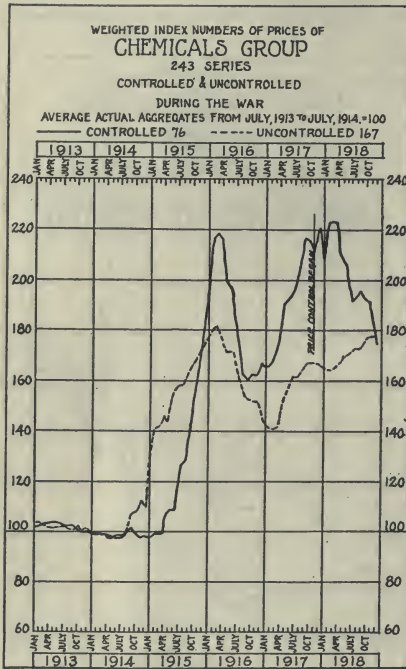


Weighted Index Numbers of Prices.—Building materials group (149 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914=100.) (Controlled, 42 series; uncontrolled, 107 series.)

while exceedingly useful to compare price movements with reference to their respective pre-war bases, falls short in that it represents the 573 commodities as having been controlled from the beginning. The extension of control was, on the other hand, gradual,

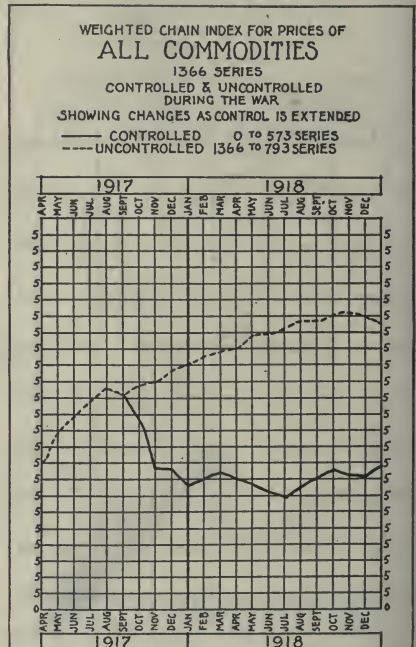
Any precise measure of the effects of regulation, therefore, makes it imperative that no particular series be put into the index until the month when its control began. The second and more accurate measure made by the Price Section, called a weighted chain

creases in exact degree, are thus strictly correct for each month. The "all commodities" chain index in April, 1917, for example, contains 1,366 commodities. In September after regulation began, the commodities were separated into 50 controlled and 1,316 uncontrolled. Each month thereafter, until the cessation of hostilities, the extension of regulations necessitated



Weighted Index Numbers of Prices.—Chemicals group (243 series) controlled and uncontrolled during the war. (Average actual aggregates, July, 1913, to June, 1914 = 100.) (Controlled, 76 series; uncontrolled, 167 series.)

index of the percentage rise or fall each month over the previous month, meets this requirement. The chain index permits, by reason of its changing base, the transfer of commodities from the uncontrolled list freely to the controlled list. The controlled list, which increases from month to month, and the uncontrolled list, which de-



the transfer of certain series from the uncontrolled list to the controlled list. By October, 1918, the original 1,366 uncontrolled commodities had been separated into 573 controlled and 793 uncontrolled. The chain index of controlled commodities, moreover, is a comparison of prices during the month when their regulation began with prices of the identical series in the month before, and the uncontrolled chain

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED PRICES, 1913-1915

Base Average Prices July, 1913, to June, 1914=100

	All Commodities			Food Group			Clothing Group		
	Controlled (573)	Uncontrolled (793)	All (1,366)	Controlled (214)	Uncontrolled (54)	All (268)	Controlled (140)	Uncontrolled (269)	All (409)
1913—Months—									
January.....	98	103	103	92	100	98	103	101	102
February.....	97	103	102	91	100	96	103	101	102
March.....	98	103	102	92	100	97	102	100	101
April.....	99	102	101	95	99	97	101	100	100
May.....	98	101	100	94	99	95	100	100	100
June.....	98	101	100	95	100	96	99	100	99
July.....	98	101	100	95	99	96	99	100	99
August.....	102	101	101	100	99	100	100	100	100
September.....	103	102	102	103	101	102	100	100	100
October.....	102	102	102	102	101	102	102	102	103
November.....	102	102	102	103	101	103	102	101	102
December.....	101	100	101	101	101	102	101	100	100
Quarters—									
First.....	97	103	102	92	100	97	102	101	101
Second.....	98	101	100	94	99	96	100	100	100
Third.....	101	101	101	100	100	99	100	100	100
Fourth.....	102	101	102	102	101	103	101	101	101
Year.....	100	102	101	97	100	99	101	100	101
1914—Months—									
January.....	99	99	100	99	100	101	99	99	99
February.....	99	99	100	99	99	101	100	99	99
March.....	99	99	99	99	99	100	100	100	100
April.....	99	99	98	99	100	98	99	99	99
May.....	99	98	97	100	100	98	100	99	99
June.....	98	99	97	99	100	97	100	100	100
July.....	98	98	97	99	100	98	100	100	100
August.....	104	98	101	107	100	105	99	100	99
September.....	105	96	101	108	100	107	98	94	94
October.....	101	95	99	104	101	104	95	93	91
November.....	99	94	98	102	101	103	93	90	88
December.....	99	94	98	102	101	104	94	91	89
Quarters—									
First.....	99	99	100	99	99	101	99	99	99
Second.....	98	99	97	99	100	98	100	100	99
Third.....	102	97	100	105	100	103	99	98	98
Fourth.....	100	94	98	103	101	104	94	91	89
Year.....	100	97	99	101	100	101	98	97	96
1915—Months—									
January.....	101	97	100	105	101	105	95	92	90
February.....	102	97	100	105	101	106	97	94	92
March.....	101	98	100	105	102	105	98	95	92
April.....	101	99	100	104	102	103	97	96	93
May.....	101	101	100	104	102	103	99	97	95
June.....	100	102	100	102	102	100	99	97	95
July.....	103	103	102	105	102	103	101	97	96
August.....	103	102	102	103	102	101	103	97	96
September.....	101	103	102	98	102	99	105	98	98
October.....	101	106	104	97	102	99	108	103	103
November.....	103	109	107	99	102	102	111	106	106
December.....	107	111	111	101	102	103	112	107	107
Quarters—									
First.....	101	97	100	105	101	105	96	94	91
Second.....	101	101	100	103	102	102	98	97	95
Third.....	102	103	102	102	102	101	103	97	97
Fourth.....	104	109	107	99	102	101	111	105	105
Year.....	102	102	102	102	102	102	102	98	97

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED PRICES, 1916-1918

Base Average Prices July, 1913, to June, 1914=100

	All Commodities			Food Group			Clothing Group		
	Controlled (573)	Uncontrolled (793)	All (1,366)	Controlled (214)	Uncontrolled (54)	All (268)	Controlled (140)	Uncontrolled (269)	All (409)
1916—Months—									
January.....	113	116	115	106	102	105	114	111	110
February.....	115	119	118	106	102	106	117	113	113
March.....	117	121	121	106	103	106	119	116	115
April.....	120	123	123	109	104	109	121	117	116
May.....	121	123	123	110	104	109	124	118	118
June.....	120	124	122	110	104	109	126	120	120
July.....	121	124	123	112	104	111	127	123	122
August.....	125	124	125	116	104	115	131	125	125
September.....	127	125	127	119	104	118	133	128	129
October.....	134	127	132	127	104	125	143	131	135
November.....	143	131	141	133	105	130	159	139	146
December.....	146	135	144	132	105	129	171	145	154
Quarters—									
First.....	115	119	118	106	103	106	117	113	112
Second.....	120	123	123	110	104	109	124	118	118
Third.....	124	124	125	116	104	115	130	125	125
Fourth.....	141	131	139	131	105	128	157	139	145
Year.....	125	124	126	116	104	115	132	124	125
1917—Months—									
January.....	151	140	148	136	110	133	170	151	155
February.....	155	142	151	140	110	136	169	153	156
March.....	164	142	156	150	110	142	173	153	157
April.....	183	146	170	170	111	157	177	158	163
May.....	192	149	178	183	113	166	181	162	167
June.....	201	152	183	182	115	164	189	168	174
July.....	209	160	189	189	123	167	195	181	187
August.....	204	162	187	186	127	168	195	186	189
September.....	205	163	186	193	130	173	197	185	189
October.....	198	167	182	194	150	177	201	186	191
November.....	200	172	183	200	156	182	204	195	199
December.....	193	174	182	191	156	178	207	198	202
Quarters—									
First.....	157	141	152	142	110	137	170	152	156
Second.....	194	149	177	179	113	162	182	163	168
Third.....	206	162	187	190	127	169	196	184	188
Fourth.....	196	171	182	193	154	178	204	193	198
Year.....	188	156	175	176	126	162	188	173	177
1918—Months—									
January.....	195	178	185	193	165	182	214	205	209
February.....	198	180	187	196	165	184	216	207	212
March.....	197	182	188	194	166	182	222	210	218
April.....	196	187	191	189	170	180	236	216	228
May.....	192	189	190	182	172	177	*240	214	226
June.....	189	191	189	179	180	175	244	215	228
July.....	195	194	193	186	180	182	247	221	233
August.....	199	195	196	192	180	187	249	221	234
September.....	204	199	201	199	181	194	241	230	237
October.....	201	201	201	194	182	195	242	231	238
November.....	200	200	201	193	188	194	241	227	234
December.....	204	197	203	201	189	202	238	223	230
Quarters—									
First.....	197	180	187	194	165	183	217	207	213
Second.....	192	189	190	183	174	177	240	215	227
Third.....	199	196	197	193	180	188	245	224	235
Fourth.....	201	199	202	196	186	197	240	227	234
Year.....	197	191	194	192	176	186	236	218	227

* Price control began during month.

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED PRICES, 1913-1915

Base Average Prices, July, 1913, to June, 1914=100

	Rubber, Paper, and Fiber Group			Metals Group			Fuels Group		
	Con- trolled (21)	Uncon- trolled (98)	All (119)	Con- trolled (49)	Uncon- trolled (67)	All (116)	Con- trolled (32)	Uncon- trolled (31)	All (63)
1913—Months—									
January.....	144	108	114	120	118	120	100	104	102
February.....	140	108	113	118	113	118	99	106	101
March.....	133	108	112	117	111	116	99	106	101
April.....	125	103	107	115	110	114	98	107	101
May.....	118	103	105	114	109	113	98	106	101
June.....	115	103	105	111	108	111	98	106	101
July.....	109	103	104	111	105	110	99	105	101
August.....	108	103	104	110	105	110	101	103	102
September.....	105	103	103	108	107	108	102	104	102
October.....	97	103	102	105	106	105	102	103	102
November.....	97	103	101	99	103	100	102	102	102
December.....	97	99	99	96	100	96	102	99	101
Quarters—									
First.....	139	108	113	118	114	118	99	105	102
Second.....	119	103	106	113	109	113	98	106	101
Third.....	107	103	103	110	106	109	101	104	101
Fourth.....	97	102	101	100	103	100	102	101	101
Year.....	116	104	106	110	108	110	100	104	101
1914—Months—									
January.....	96	98	98	95	99	96	102	100	101
February.....	98	98	98	98	98	98	102	99	100
March.....	98	97	98	97	96	97	101	99	100
April.....	101	98	99	96	95	96	99	97	98
May.....	100	98	98	94	94	92	94	95	96
June.....	93	97	97	92	92	93	93	93	95
July.....	93	97	96	92	90	91	93	89	94
August.....	110	98	101	93	100	94	93	87	94
September.....	105	98	100	94	92	93	91	85	92
October.....	97	97	98	91	87	91	89	84	91
November.....	99	97	98	89	87	89	89	83	91
December.....	111	97	100	89	90	89	89	83	91
Quarters—									
First.....	98	98	98	97	98	97	102	100	101
Second.....	98	98	98	94	93	94	95	95	96
Third.....	103	97	99	93	94	93	93	87	93
Fourth.....	102	97	99	90	88	89	89	83	91
Year.....	100	97	98	93	93	93	95	91	95
1915—Months—									
January.....	111	97	100	90	95	91	89	82	90
February.....	96	85	90	91	108	93	89	80	89
March.....	98	85	90	92	119	95	86	78	88
April.....	97	85	90	94	124	98	84	77	85
May.....	95	85	90	96	145	101	84	77	85
June.....	98	86	90	99	164	106	84	77	85
July.....	99	86	91	102	172	110	83	76	85
August.....	97	86	90	105	147	110	85	77	86
September.....	95	85	89	110	147	114	91	79	90
October.....	96	86	90	113	145	116	92	87	92
November.....	104	86	92	119	159	124	93	95	95
December.....	117	87	95	132	163	136	98	103	100
Quarters—									
First.....	102	89	93	91	108	93	88	80	89
Second.....	97	85	90	96	145	102	84	77	85
Third.....	97	86	90	106	155	111	86	78	87
Fourth.....	106	86	93	121	156	125	94	95	96
Year.....	100	87	91	104	141	108	88	82	89

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED PRICES, 1916-1918

Base Average Prices, July, 1913, to June, 1914=100

	Rubber, Paper, and Fiber Group			Metals Group			Fuels Group		
	Con- trolled (21)	Uncon- trolled (98)	All (119)	Con- trolled (49)	Uncon- trolled (67)	All (116)	Con- trolled (32)	Uncon- trolled (31)	All (63)
1916—Months—									
January.....	132	93	103	141	186	147	105	111	106
February.....	122	96	104	148	203	154	106	115	107
March.....	130	99	109	164	201	168	109	120	109
April.....	124	103	112	168	212	174	114	120	112
May.....	114	105	112	166	209	171	114	123	113
June.....	106	106	111	165	197	169	114	123	113
July.....	101	107	112	165	185	167	113	123	113
August.....	102	109	114	169	181	170	107	123	110
September.....	102	111	117	172	181	172	105	118	109
October.....	106	113	120	177	187	176	109	117	111
November.....	111	116	123	202	196	202	119	119	120
December.....	125	119	129	220	202	218	123	119	122
Quarters—									
First.....	128	96	106	150	197	155	107	115	107
Second.....	114	104	112	167	206	171	114	123	113
Third.....	102	109	114	169	182	171	108	121	111
Fourth.....	114	116	124	199	195	199	117	118	118
Year.....	114	107	114	171	195	174	111	119	112
1917—Months—									
January.....	133	127	138	230	199	226	131	127	129
February.....	139	129	141	237	205	234	136	133	133
March.....	144	130	143	251	210	247	134	134	131
April.....	142	135	146	267	205	260	173	135	163
May.....	150	136	148	285	206	276	182	137	172
June.....	147	136	147	330	205	315	184	137	173
July.....	140	135	144	350	205	333	178	140	168
August.....	140	135	143	328	198	313	178	140	169
September.....	142	142	149	295	192	283	176	142	165
October.....	139	142	147	234	188	228	176	142	164
November.....	138	141	146	212	190	209	179	144	167
December.....	138	140	145	211	186	208	180	148	170
Quarters—									
First.....	138	129	141	239	205	235	134	131	131
Second.....	146	136	147	296	206	286	180	136	170
Third.....	141	137	145	325	199	310	177	140	167
Fourth.....	138	141	146	219	188	215	178	145	167
Year.....	141	136	145	270	199	262	167	138	158
1918—Months—									
January.....	147	142	148	212	181	208	182	155	173
February.....	140	144	148	212	179	209	182	157	174
March.....	144	144	150	212	183	209	184	159	175
April.....	149	150	155	211	181	208	215	161	200
May.....	156	157	162	212	189	209	219	167	204
June.....	155	160	165	212	190	210	215	169	202
July.....	156	159	164	214	197	212	215	168	201
August.....	155	160	166	215	207	214	216	168	202
September.....	153	161	166	215	206	214	218	169	204
October.....	146	161	165	217	205	216	218	169	204
November.....	143	161	163	217	201	216	224	166	207
December.....	139	160	162	212	200	211	224	166	207
Quarters—									
First.....	143	143	149	212	181	209	182	157	174
Second.....	153	156	161	212	187	209	216	166	202
Third.....	155	160	165	215	203	213	216	168	202
Fourth.....	143	161	163	216	202	214	222	167	207
Year.....	149	155	160	213	193	211	209	164	196

* Price control began during month.

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED PRICES, 1913-1915

Base Average Prices, July, 1913, to June, 1914=100

	Building Materials Group			Chemicals Group		
	Controlled (42)	Uncontrolled (107)	All (149)	Controlled (75)	Uncontrolled (167)	All (242)
1913—Months—						
January.....	108	100	104	102	103	103
February.....	108	101	104	102	103	104
March.....	109	101	105	103	103	104
April.....	110	101	105	103	102	103
May.....	110	101	105	103	102	103
June.....	110	101	105	102	102	102
July.....	104	101	102	102	102	102
August.....	104	101	102	102	101	101
September.....	104	102	103	101	102	101
October.....	100	101	100	100	100	100
November.....	99	100	100	100	101	100
December.....	99	100	100	100	101	101
Quarters—						
First.....	108	101	104	102	103	103
Second.....	110	101	105	103	102	103
Third.....	104	101	103	102	102	102
Fourth.....	99	100	100	100	100	100
Year.....	106	101	103	102	102	102
1914—Months—						
January.....	98	100	99	99	99	99
February.....	98	100	99	99	99	99
March.....	99	100	99	99	100	100
April.....	98	99	99	99	99	99
May.....	98	99	98	99	98	98
June.....	98	99	98	98	99	99
July.....	97	99	98	98	98	98
August.....	97	99	98	99	99	99
September.....	98	99	98	101	107	106
October.....	93	98	96	99	108	105
November.....	92	98	95	98	111	106
December.....	91	97	94	98	109	105
Quarters—						
First.....	98	100	99	99	99	99
Second.....	98	99	98	99	99	99
Third.....	97	99	98	99	101	101
Fourth.....	92	98	95	98	109	105
Year.....	96	99	98	99	102	101
1915—Months—						
January.....	90	96	93	98	135	123
February.....	91	96	93	99	141	126
March.....	91	96	93	99	142	126
April.....	91	96	93	107	147	133
May.....	92	96	94	108	144	132
June.....	92	97	94	108	154	137
July.....	93	100	96	125	158	146
August.....	93	99	95	129	158	148
September.....	93	99	95	141	163	155
October.....	104	101	101	152	166	162
November.....	106	100	101	163	171	172
December.....	106	101	102	173	174	178
Quarters—						
First.....	91	96	93	98	139	125
Second.....	92	96	94	107	148	134
Third.....	93	100	95	132	159	149
Fourth.....	105	101	102	163	170	171
Year.....	95	98	96	125	154	145

PRICE SECTION WEIGHTED INDEX NUMBER SEPARATED INTO CONTROLLED AND UNCONTROLLED
PRICES, 1916-1918*Base Average Prices, July, 1913, to June, 1914=100*

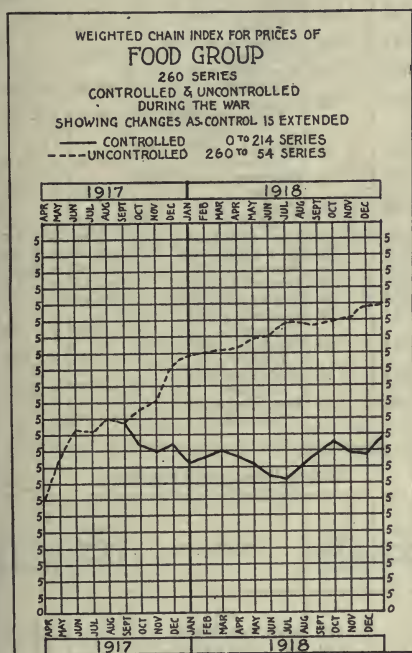
	Building Materials Group			Chemicals Group		
	Con- trolled (42)	Uncon- trolled (107)	All (149)	Con- trolled (75)	Uncon- trolled (167)	All (242)
1916—Months—						
January.....	113	108	109	196	177	189
February.....	114	111	111	216	181	200
March.....	115	112	112	218	181	201
April.....	113	117	113	216	176	198
May.....	114	118	113	200	171	188
June.....	114	118	113	197	170	185
July.....	111	117	112	177	163	175
August.....	111	117	112	164	156	166
September.....	111	117	112	180	153	162
October.....	119	118	116	163	152	162
November.....	120	119	118	163	152	163
December.....	121	122	119	167	149	162
Quarters—						
First.....	114	110	110	210	179	196
Second.....	114	118	113	205	172	190
Third.....	111	117	112	167	158	168
Fourth.....	119	120	118	164	151	162
Year.....	115	116	114	187	165	179
1917—Months—						
January.....	129	132	129	166	145	159
February.....	130	133	130	167	142	157
March.....	131	135	132	172	141	159
April.....	157	141	146	179	142	163
May.....	158	144	148	190	152	172
June.....	159	148	151	192	167	174
July.....	164	151	155	196	162	180
August.....	164	152	155	203	161	183
September.....	164	153	156	217	163	190
October.....	165	153	157	217	167	193
November.....	*167	155	159	*213	167	191
December.....	167	155	159	221	167	193
Quarters—						
First.....	130	134	130	169	143	158
Second.....	158	144	148	188	150	170
Third.....	164	152	155	206	162	184
Fourth.....	166	154	158	217	167	192
Year.....	155	146	148	195	156	176
1918—Months—						
January.....	174	161	165	207	166	186
February.....	175	160	165	223	165	192
March.....	177	167	169	224	166	192
April.....	184	175	176	224	167	192
May.....	186	178	179	212	170	190
June.....	187	180	181	207	171	189
July.....	187	184	182	192	172	184
August.....	188	186	184	193	173	186
September.....	189	190	186	196	174	188
October.....	186	190	185	193	178	190
November.....	187	190	186	192	179	193
December.....	186	188	185	174	178	183
Quarters—						
First.....	176	162	167	218	166	190
Second.....	186	178	179	215	169	190
Third.....	188	187	184	194	173	186
Fourth.....	186	189	185	186	178	189
Year.....	184	179	179	203	172	189

* Price control began during month.

index is a comparison of prices still uncontrolled by the end of each month with identical series for the month preceding.

The weighted chain index of "all commodities," taking into account 1,366 individual series which represent the general price level, moved per-

upward. Each month, however, some of these uncontrolled commodities were brought under control and the behavior of the controlled chain index is markedly different. The government had begun to control prices in earnest by September, and the September controlled prices fell 8.05 per cent below their own August level, while those under control in October fell 14.78 per cent below their own September level. The controlled chain index thus, contrary to the movement of its companion index, made an enormous drop at the beginning of control and from November, 1917, until the armistice, held relatively stable. The movement of the food group index, significantly, is very like that of "all commodities" in which it has a large weighting. The clothing group chain index shows that the controlled series went somewhat higher in their monthly rises between May and September, 1918, than those not under control, and then fell below. The outstanding features of the chain index for the metals group are the extent to which prices were scaled from previous heights and the strength with which they were held afterward. Metal prices, in September, 1917, were brought 9.32 per cent below their August level; in October they were brought 24.82 per cent below their September level; and in November they were brought 9.68 per cent below their October level. Metal prices, once reduced to this lower level, show scarcely the variation of 1 per cent up to the signing of the armistice. The fuels group chain index shows a fairly stable price movement except for the enormous increase of 20.9 per cent in April, 1918, the beginning of the new "coal year" when



Weighted Chain Index for Prices.—Food group (268 series) controlled and uncontrolled during the war, showing changes as control is extended. (Controlled, 0-214 series; uncontrolled, 268-54 series.)

sistently upward each month from our entrance into the war until August, 1917. Regulation began in September and the "all commodities" chain index from that point is separated into controlled and uncontrolled. The uncontrolled lot throughout the remainder of the war, with a most curious abandon of the other index, moved steadily

CHAIN INDEX OF CONTROLLED AND UNCONTROLLED PRICES

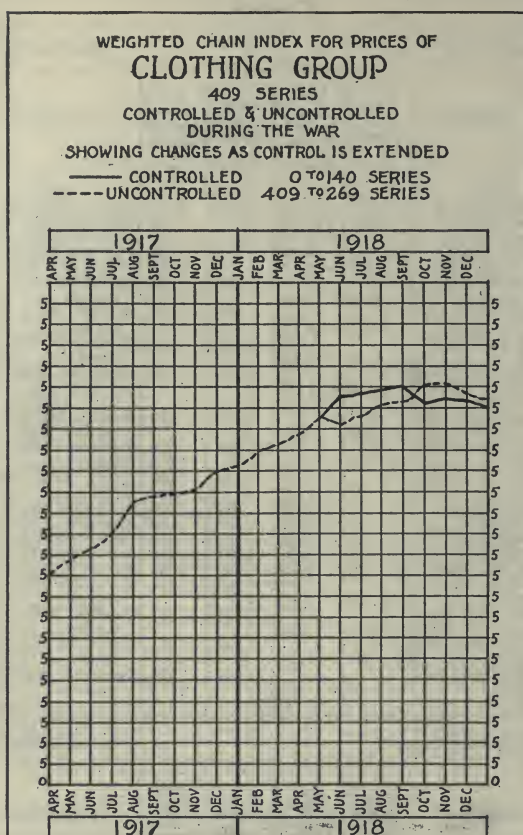
Showing Weighted Rise or Fall, by Per Cents, of Controlled and Uncontrolled Prices for Each Month of the War

All Commodities					Food Group				
Controlled Series	Uncontrolled Series	Comparison	Controlled Prices	Uncontrolled Prices	Controlled Series	Uncontrolled Series	Comparison	Controlled Prices	Uncontrolled Prices
		1917					1917		
....	1,366	April with March ..	....	+9.73	....	268	April with March ..	....	+13.21
....	1,366	May with April ..	....	+4.44	....	268	May with April ..	....	+ 7.38
....	1,366	June with May ..	....	+4.13	....	268	June with May ..	....	+ .79
....	1,366	July with June ..	....	+4.23	....	268	July with June ..	....	+ 4.20
....	1,366	August with July ..	....	-1.61	....	268	August with July ..	....	- 1.35
50	1,316	September with August ..	- 8.05	+1.94	12	256	September with August ..	-7.19	+ 4.75
66	1,300	October with September ..	-14.78	+1.11	21	247	October with September ..	-1.95	+ 1.92
266	1,100	November with October ..	- .12	+3.64	185	83	November with October ..	+1.83	+10.24
294	1,072	December with November ..	- 4.60	+1.75	185	83	December with November ..	-5.77	+ 3.35
		1918					1918		
318	1,048	January with December, 1917 ..	+ 1.25	+1.72	185	83	January with December, 1917 ..	+1.46	+ .45
352	1,014	February with January ..	+ 1.66	+ .98	214	54	February with January ..	+1.99	+ .36
362	1,004	March with February ..	- .90	+1.66	214	54	March with February ..	-1.17	+ .40
387	979	April with March ..	- 1.53	+3.30	214	54	April with March ..	-2.83	+ 2.33
469	897	May with April ..	- 2.22	+ .74	214	54	May with April ..	-3.24	+ 1.53
481	885	June with May ..	- 1.45	+1.42	214	54	June with May ..	-1.85	+ 4.36
545	821	July with June ..	+ 2.83	+1.42	214	54	July with June ..	+4.05	+ .15
570	796	August with July ..	+ 2.25	+ .50	214	54	August with July ..	+3.03	- .04
572	794	September with August ..	+ 2.43	+2.08	214	54	September with August ..	+3.80	+ .52
573	793	October with September ..	- 1.63	+ .51	214	54	October with September ..	-2.48	+ .66
573	793	November with October ..	- .27	- .49	214	54	November with October ..	- .53	+ 3.59
573	793	December with November ..	+ 2.06	-1.04	214	54	December with November ..	+4.00	+ .42

Clothing Group					Rubber, Paper, and Fiber Group				
Controlled Series	Uncontrolled Series	Comparison	Controlled Prices	Uncontrolled Prices	Controlled Series	Uncontrolled Series	Comparison	Controlled Prices	Uncontrolled Prices
		1917					1917		
....	409	April with March ..	....	+3.36	....	119	April with March ..	....	+2.59
....	409	May with April ..	....	+2.07	....	119	May with April ..	....	+1.65
....	409	June with May ..	....	+4.15	....	119	June with May ..	....	- .23
....	409	July with June ..	....	+6.41	....	119	July with June ..	....	-1.76
....	409	August with July ..	....	+1.58	....	119	August with July ..	....	- .18
....	409	September with August ..	....	+ .03	....	119	September with August ..	....	+4.16
....	409	October with September ..	....	+ .85	....	119	October with September ..	....	- .36
....	409	November with October ..	....	+4.01	....	119	November with October ..	....	- .49
....	409	December with November ..	....	+1.51	....	119	December with November ..	....	- .45
		1918					1918		
....	409	January with December, 1917 ..	....	+3.20	....	119	January with December, 1917 ..	....	+2.16
....	409	February with January ..	....	+1.11	....	119	February with January ..	....	+ 0.00
....	409	March with February ..	....	+2.01	8	111	March with February ..	-0.26	+ .92
....	409	April with March ..	....	+3.95	9	110	April with March ..	+ .70	+4.23
67	342	May with April ..	+4.89	- .39	19	100	May with April ..	+4.93	+4.54
69	340	June with May ..	+ .38	+ .92	19	100	June with May ..	+ .11	+1.70
122	287	July with June ..	+ .87	+2.78	19	100	July with June ..	+ .60	- .61
138	271	August with July ..	+ .69	+ .13	20	99	August with July ..	-1.54	+ .92
140	269	September with August ..	-3.16	+3.81	20	99	September with August ..	+ .05	- .02
140	269	October with September ..	+ .45	+ .54	21	98	October with September ..	-4.41	+ .23
140	269	November with October ..	- .23	-1.78	21	98	November with October ..	-2.42	- .03
140	269	December with November ..	-1.26	-1.78	21	98	December with November ..	-2.63	- .73

CHAIN INDEX OF CONTROLLED AND UNCONTROLLED PRICES—Continued
Showing Weighted Rise and Fall, by Per Cents, of Controlled and Uncontrolled Prices for Each Month of the War

Metals Group					Fuels Group				
Controlled Series	Un-controlled Series	Comparison	Controlled Prices	Un-controlled Prices	Controlled Series	Un-controlled Series	Comparison	Controlled Prices	Un-controlled Prices
1917					1917				
....	116	April with March ..	....	+ 5.22	....	63	April with March ...	....	+17.83
....	116	May with April.....	....	+ 6.53	....	63	May with April.....	....	+ 3.96
....	116	June with May.....	....	+14.15	....	63	June with May.....	....	+ .72
....	116	July with June.....	....	+ 5.59	....	63	July with June.....	....	- 1.67
....	116	August with July ..	....	- 6.14	....	63	August with July ...	....	+ .24
11	105	September with			27	36	September with		
		August.....	- 9.32	- 9.46			August.....	- 6.07	+ 5.05
18	98	October with Sep-			27	36	October with Sep-		
		tember.....	-24.82	- 4.83			tember.....	- .20	+ .17
26	90	November with Oc-			27	36	November with Oc-	+ 2.68	+ .68
		tober.....	- 9.68	- 3.00			tober.....		
39	77	December with No-			27	36	December with No-	+ .70	+ 1.96
		vember.....	- .39	- 1.25			vember.....		
1918					1918				
39	77	January with De-			27	36	January with De-	+ .88	+ 3.52
		cember, 1917.....	+ .16	- .95			cember, 1917.....		
40	76	February with Jan-			27	36	February with Jan-	+ .19	+ 1.17
		uary.....	+ .39	- 1.14			uary.....		
42	74	March with Febru-			27	36	March with Febru-		
		ary.....	- .15	+ 1.99			ary.....	+ .56	+ 1.37
46	70	April with March...	- .40	- 1.07	27	36	April with March ...	+20.90	+ 3.47
49	67	May with April.....	+ .07	+ 4.09	27	36	May with April.....	+ 1.13	+ 3.46
49	67	June with May.....	+ .22	+ .98	27	36	June with May.....	- 2.39	+ .87
49	67	July with June.....	+ .86	+ 3.35	27	36	July with June.....	- .16	- .48
49	67	August with July ..	+ .47	+ 5.13	32	31	August with July ...	+ .34	+ .15
49	67	September with			32	31	September with		
		August.....	+ .01	- .40			August.....	+ 1.17	+ .45
49	67	October with Sep-			32	31	October with Sep-		
		tember.....	+ 1.10	- .60			tember.....	0.00	0.00
49	67	November with Oc-			32	31	November with Oc-		
		tober.....	+ .11	- 1.81			tober.....	+ 2.53	- 1.56
49	67	December with No-			32	31	December with No-		
		vember.....	- 2.61	- .51			vember.....	0.00	- .08
Building Materials Group					Chemicals Group				
Controlled Series	Un-controlled Series	Comparison	Controlled Prices	Un-controlled Prices	Controlled Series	Un-controlled Series	Comparison	Controlled Prices	Un-controlled Prices
1917					1917				
....	149	April with March ..	....	+10.40	....	242	April with March ...	....	+2.47
....	149	May with April.....	....	+ 1.58	....	242	May with April.....	....	+6.46
....	149	June with May.....	....	+ 1.65	....	242	June with May.....	....	+2.00
....	149	July with June.....	....	+ 2.72	....	242	July with June.....	....	+2.65
....	149	August with July ..	....	+ .24	....	242	August with July ...	....	+1.67
....	149	September with .....			....	242	September with		
		August.....	....	+ .33			August.....	....	+4.00
....	149	October with Sep-			....	242	October with Sep-		
		tember.....	....	+ .45			tember.....	....	+1.08
6	143	November with Oc-			22	220	November with Oc-	+2.88	-1.13
		tober.....	+0.57	+ 1.15			tober.....		
16	133	December with No-			27	215	December with No-	+2.54	-1.71
		vember.....	- .19	+ .51			vember.....		
1918					1918				
16	133	January with De-			51	191	January with De-	+ .74	-4.83
		cember, 1917.....	+3.91	+ 3.71			cember, 1917.....		
16	133	February with Jan-			55	187	February with Jan-	+1.23	+4.43
		uary.....	+ .71	- .12			uary.....		
16	133	March with Feb-			55	187	March with Feb-		
		ruary.....	+1.86	+ 3.12			ruary.....	+ .33	+ .83
31	118	April with March...	+4.26	+ 4.73	60	182	April with March ...	- 45	+ .45
31	118	May with April.....	- .96	- 1.73	62	180	May with April.....	-1.21	-2.41
31	118	June with May.....	+ .09	+ 1.57	72	170	June with May.....	- 1.99	+ .47
42	107	July with June.....	+ .32	+ 1.68	72	170	July with June.....	-7.62	+ .09
42	107	August with July ..	+ .93	+ 1.11	75	167	August with July ...	-2.33	- .50
42	107	September with			75	167	September with		
		August.....	+ .09	+ 1.86			August.....	+1.19	+ .63
42	107	October with Sep-			75	167	October with Sep-		
		tember.....	-1.47	0.00			tember.....	-1.46	+2.39
42	107	November with Oc-			75	167	November with Oc-	- .36	+ .56
		tober.....	+ .53	+ .35			tober.....		
42	107	December with No-			75	167	December with No-	-9.44	- .95
		vember.....	- .35	- 1.03			vember.....		



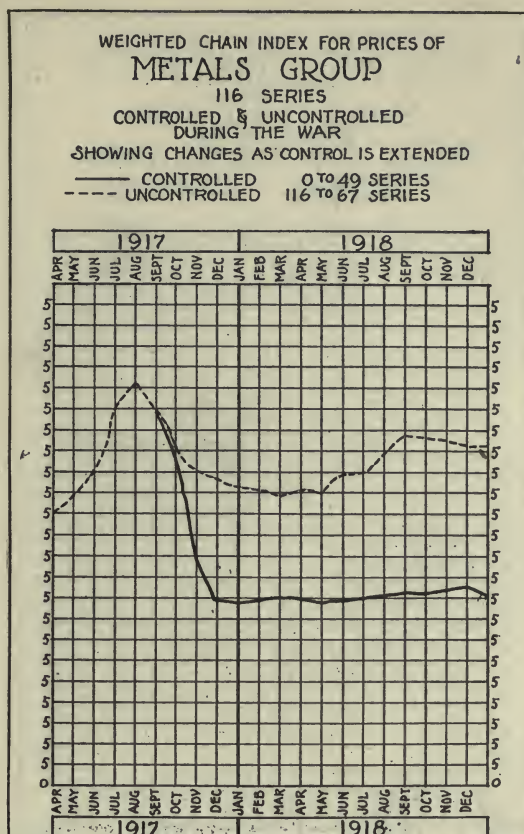
Weighted Chain Index for Prices.—Clothing group (409 series) controlled and uncontrolled during the war, showing changes as control is extended (Controlled, 0-140 series; uncontrolled, 409-269 series.)

the annual contracts, under which a very large proportion of all coal mined is sold, were reversed.

RELATIVE POINTS BELOW WHICH 50 BASIC COMMODITIES WERE PEGGED

One of the primary motives behind price control during the war was the desire to stimulate a maximum production. The various committees, though always desirous of holding prices within reasonable bounds, were anxious primarily to assure a full out-

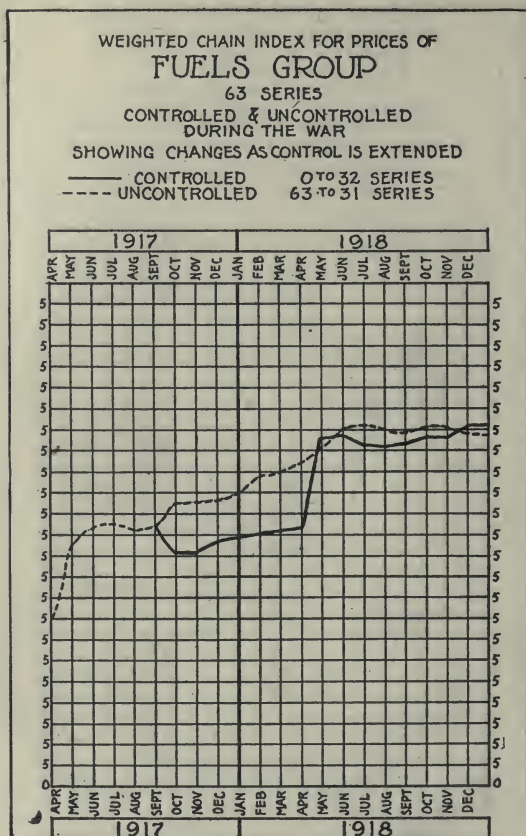
put and did so frequently by means of liberal price allowances. They undertook to meet these ends by a rather extensive regulation over the prices of important basic raw materials. The government early regulated wheat, and then as occasion demanded it extended control to various other raw materials such as copper, iron ore, pig iron, lumber, wool, hides and skins, and cotton yarns. A study of the schedules of these fixed prices gives a very poor notion of the relative market



Weighted Chain Index for Prices.—Metals group (116 series) controlled and uncontrolled during the war, showing changes as control is extended. (Controlled, 0-49 series; uncontrolled, 116-67 series.)

heights at which each regulation began, both with respect to its own pre-war level and with respect to that of other controlled prices. It is of significance to note whether government interference with prices began generally at the same relative height, or whether other factors dictated the time and character of the government control. An equally significant inquiry is the relation which the fixed prices bore to the market prices prevailing at the time regulation set in.

There have been here chosen from the controlled commodities 50 representative series, which typify the common practices of government regulation. The actual market prices at wholesale by months from January, 1913, through December, 1918, for each of these controlled basic commodities were turned into relative prices by making the average pre-war price (July 1, 1913, to June 30, 1914) equal 100. Each relative price thus is strictly comparable with any other.

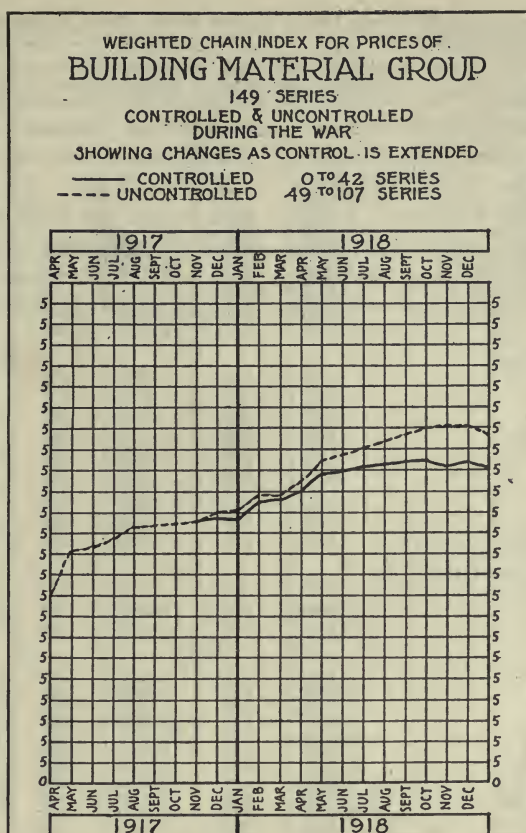


Weighted Chain Index for Prices.—Fuel group (63 series) controlled and uncontrolled during the war, showing changes as control is extended. (Controlled, 0-32 series; uncontrolled, 63-31 series.)

Relative prices of this character, for those who seek simply the relation of any market price when government control began to its corresponding pre-war price, are more accurate than the index numbers or chain indexes of groups and classes. The relative prices of individual raw materials controlled, for the point in mind, have the decided advantage of standing as separate series precisely at the height they had attained when taken hold of by the government. They, moreover, are

free from weights and permit of a study of price rises pure and simple.

The market price for calfskins, No. 1, country, 8 to 15 pounds, at Chicago, for example, was \$0.1984 per pound (made equal to 100) before the war in Europe. It had reached \$0.4040 per pound (found equal to 204 when compared with the pre-war price) in May, 1918, when the government determined upon control of calfskin prices. The government set the price at \$0.34 per pound (similarly found equal to



Weighted Chain Index for Prices.—Building materials group (149 series) controlled and uncontrolled during the war, showing changes as control is extended. (Controlled, 0-42 series; uncontrolled, 149-107 series.)

171). It is clear that while the market had sent calfskin prices from 100 in 1913-14 to 204 by May, 1918, the government then fixed them at a maximum of 171, by which one may make for himself a similar analysis for each of the 50 following commodities. It should be remembered, of course, that the method of control for all commodities was not identical. Wheat, for example, was given a minimum rather than a maximum price. A summary of the relative price of 50 selected

commodities before the European war—the relative market price which prevailed when the government determined upon regulation and the relative price at which the government fixed its initial price—follows:

THE LIFTING OF GOVERNMENT CONTROL OVER PRICES

The government began lifting its war-time control over prices immediately after the signing of the armistice, and had, in fact, virtually restored

A SUMMARY OF ACTUAL AND RELATIVE PRICES BELOW WHICH BASIC COMMODITIES WERE FIXED

Commodity	Pre-war Price (July, 1913 to June, 1914)		Market Price When Control Began		Government Initial Fixed Price	
	Actual	Relative	Actual	Relative	Actual	Relative
FOODS						
1. Bacon.....	\$0.1298	100	.....	.....	.....	.....
2. Beef.....	.1297	100	.....	.....	.....	.....
3. Cattle.....	9.1022	100	.....	.....	.....	.....
4. Corn.....	.6859	100	.....	.....	.....	.....
5. Cottonseed oil.....	.0607	100	\$0.1750	288	\$0.1750	288
6. Hogs, live.....	8.3094	100	16.9500	204	15.5000	187
7. Oats.....	.4005	100	.....	.....	.....	.....
8. Rice.....	.0526	100	.0938	178	.0913	174
9. Sugar, raw.....	.0340	100	.0690	203	.06005	176
10. Wheat.....	.8901	100	2.7875	313	2.1700	244
CLOTHING						
11. Calfskins.....	.1984	100	.4040	204	.3400	171
12. Cattle hides.....	.1861	100	.3110	167	.3300	177
13. Cotton duck.....	.1550	100	.3425	221	.3350	216
14. Cotton linters.....	.0205	100	.0487	238	.0467	228
15. Cotton weaving yarn.....	.2438	100	.7120	292	.6650	273
16. Leather, harness.....	.4121	100	.6800	165	.6800	165
17. Leather, belting.....	.5042	100	.9700	192	.9600	190
18. Print cloths.....	.0835	100	.1300	388	.1125	336
19. Rags, woolen.....	.1250	100	.5650	452	.6200	496
20. Sheetting.....	.0606	100	.2300	380	.1750	289
21. Wool, domestic.....	.2317	100	.7500	324	.7500	324
22. Wool, Buenos Aires.....	.3083	100	.7400	240	.7400	240
RUBBER, PAPER, AND FIBER						
23. Manila fiber.....	.0780	100	.7731	350	.2600	333
24. Paper, newsprint.....	1.9046	100	3.2450	170	3.1000	163
25. Rubber, crude.....	.6123	100	.6000	98	3.5000	184
					.6300	103
METALS						
26. Copper, electrolytic.....	.1492	100	.2545	171	.2350	158
27. Iron, Ore.....	3.3083	100	5.0500	153	5.0500	153
28. Lead, pig.....	.0418	100	.0625	150	.0805	193
29. Pig iron, basic.....	13.3133	100	42.7500	321	33.0000	248
30. Quicksilver.....	38.8558	100	121.7500	313	105.0000	270
31. Steel bars.....	1.2600	100	3.8800	308	2.9000	230
32. Steel billets.....	21.7917	100	55.2500	254	47.5000	218
33. Steel plates.....	1.2600	100	7.0500	560	3.2500	258
34. Steel structural shapes.....	1.4600	100	5.1900	355	3.0000	205
35. Tinplate.....	3.4375	100	12.0000	349	7.7500	225
36. Zinc sheets.....	.0735	100	.1800	245	.1500	204
FUELS						
37. Coal, anthracite.....	3.7800	100	4.9000	130	4.8000	127
38. Coal, bituminous.....	1.0900	100	2.5400	233	2.0000	183
39. Coke, Connellsville.....	2.0625	100	11.7500	570	6.0000	291
40. Petroleum, crude.....	.9725	100	2.2500	231	.....	.....
BUILDING MATERIALS						
41. Cement, Portland.....	1.5800	100	2.5600	162	1.8500	117
42. Douglas fir.....	7.9167	100	18.5000	234	18.5000	234
43. Pennsylvania hemlock.....	24.8300	100	32.6200	131	32.0000	129
44. Southern or yellow pine.....	13.8750	100	27.5000	198	24.0000	173
45. New England spruce.....	24.2600	100	46.3700	191	45.0000	185
CHEMICALS						
46. Alcohol, wood.....	.4558	100	1.3500	296	.7900	173
47. Arsenic.....	.0310	100	.1600	516	.0900	290
48. Caustic soda.....	.0181	100	.0490	271	.0350	193
49. Nitrate of soda.....	2.3183	100	4.4938	194	4.2250	182
50. Sulphuric acid.....	.0085	100	.0125	147	.0090	106

prices to free competition by the end of 1918. Some controls were continued a short while beyond November 11, 1918, at requests from the industries to allow for gradual readjustment, or where it was required that particular

transactions already underway be completed.

The War Industries Board told its commodity chiefs after the armistice was signed that the war was over, and repeatedly refused to enter into new

regulations. It closed its doors to new business officially on December 31, 1918. The price-fixing committee refused numerous requests to continue price fixing, in the main, and disbanded on March 1, 1919. The Fuel Administration relinquished its control over fuels and closed officially all price control on January 31, 1919. The Food Administration, though obliged

to continue certain controls, such as wheat and sugar, lifted most of its regulations soon after the armistice. The War Trade Board continued its license control over exports and imports somewhat longer than other boards continued price control, but closed its official work on June 30, 1919, and went into the State Department for liquidation.

The Trend in Wholesale Prices for the Products of American Farms During the War Period

By CLYDE L. KING, PH.D.

Wharton School of Finance and Commerce, University of Pennsylvania

THE chart on the next page pictures the relative increase in the wholesale price of farm products through 1913 up to 1920 by months as compared with the increase in the wholesale price of all other commodities. The index numbers used for both curves are those prepared by the Bureau of Labor Statistics. The prices for the year 1913 are taken as equal to one hundred in both curves. The price on all farm products has increased more rapidly than has the price for all commodities including farm products. As a basis for comparison, this chart also includes the relative increases in the values (dollars) of (1) all crops, (2) animals and animal products and (3) all farm products.

While this chart shows that the prices of all farm products have kept pace with and exceeded the increase in the price of all commodities, an examination of prices by products shows that the wholesale prices for meats and for poultry and dairy products did not rise as rapidly as did the prices for all commodities nor for all farm products.

Charts Nos. 2 and 3 on page 45 from the bulletins of the War Industries Board show the relative wholesale prices of (a) poultry and dairy products and (b) livestock, meats and fats as compared with the prices of all commodities from January, 1913, to December, 1918, inclusive. In

neither of those groups of commodities did prices increase as rapidly as did the general price level.

Chart No. 4 on page 47 compares the increase in the price received by the milk producer in the Philadelphia and Pittsburg districts from 1913 to 1919 inclusive with the relative increase in the price of all other commodities. As shown by the years 1913 and 1914 the normal seasonal variation in price to milk producers is above and below the current price level. In 1916 the price to producers in the season of greatest production fell as low as the price for milk in previous seasons, while the prices of all other commodities tended upward. In the years 1915, 1916 and 1917 the price of milk to these producers did not increase as rapidly as did the general price level. In 1918 and 1919, however, the milk producer in these districts received a seasonal increase above as well as below the price level of other commodities and an annual average price equal to the price level of other commodities. During 1918 and 1919 the milk producer in these districts was getting a price for his product fully equal to the price increase in all other commodities. In these territories, therefore, while the prices to milk producers lagged in 1915, 1916 and 1917, they fairly caught up with the current price level in 1918 and 1919.

I have used as a basis for this com-

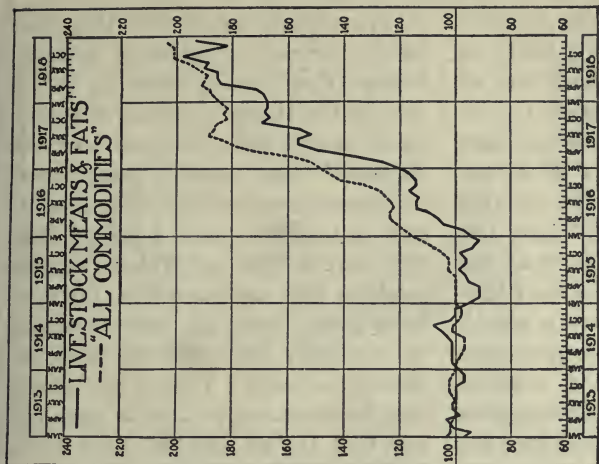


CHART No. 3

THE RELATIVE PRICES OF LIVESTOCK, MEATS, AND FATS AS COMPARED WITH ALL OTHER COMMODITIES, JANUARY, 1913, TO DECEMBER, 1918 *

* Weighted Index Number by months. (Average quoted prices for July, 1913, to June, 1914 = 100.)

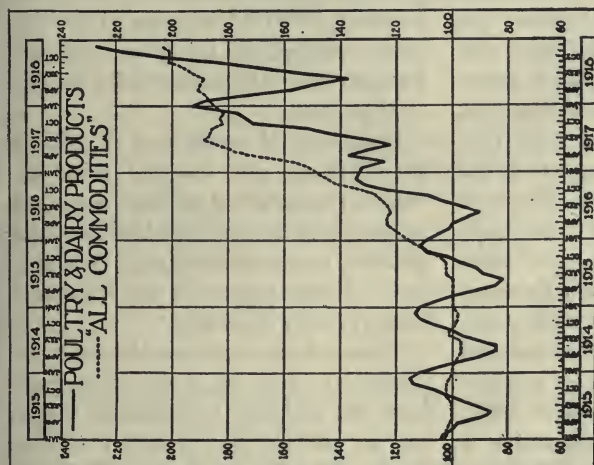


CHART No. 2

RELATIVE WHOLESALE PRICES RECEIVED FOR POULTRY AND DAIRY PRODUCTS, 1913-1918, COMPARED WITH THE WHOLESALE PRICE RECEIVED BY PRODUCERS *

* From *War Industries Board Bulletin No. 21*, page 6. Relative Prices of Poultry: Dressed Fowls, western; live fowls, choice—by months, January, 1913, to December, 1918. (Average quoted prices, July, 1913, to June, 1914 = 100.)

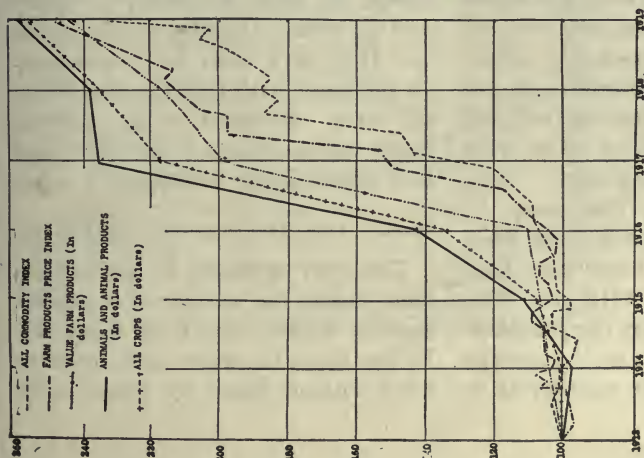


CHART No. 1

WHOLESALE PRICE OF FARM PRODUCTS AND ALL COMMODITIES AND RELATIVE INCREASE IN THE VALUE OF ALL CROPS, ANIMAL PRODUCTS AND ALL FARM PRODUCTS, 1913=100.

parison the average wholesale price from July, 1913, to June, 1914, as equal to one hundred both for all commodities and for the price to producers of milk. This average base price for this period was \$1.49 per cwt. to the producer at the country receiving station in the Pittsburg territory as compared with \$1.64 at the country receiving station in the Philadelphia district. For many a month during the war period the producers in both of these districts received identical prices. The Philadelphia curve showing price to producers has not the extremes of the producers' curve in Pittsburg just because the base or divisor was fifteen cents per cwt. higher in the Philadelphia district.

To this method of finding out whether the dollar of the milk producer now purchases as much as it did before the war, producers can urge three objections: One is that their price from July, 1913, to June, 1914, was not a fair price. Prices for farm products depend as much upon what else a farmer can do with his farm and his labor as upon the cost of producing some one product, such as milk. On the basis of this comparison it would be difficult now for the producer to prove that this base price was not fair. But even if reasonable corrections were made by increasing it, the dollar of the milk producer will still buy now by this test just about what it bought in 1913 and in 1914.

Another objection that may be urged is that other groups in the cities are getting relatively much more than they were getting in 1913 and 1914. On this point, however, the probabilities are that all groups on the average are in about the same position as to

real purchasing power, that they were before the war. Statistical averages indicate that the only exception to this rule is the larger profit of manufacturers and a higher increase to a few classes of wage earners, though most wage earners are no better off and some, such as teachers, much worse off than they were in 1913 and 1914. The milk producer may also claim that prices of feeds going into milk have increased more rapidly than has the price received for milk. This is no doubt true for some months, but is certainly not true for all months since 1913. Pittsburg milk producers last year, however, received a price above the prices prevailing in other primary markets especially for the latter months of that year.

Producers of meats and of milk in general have not received price advances proportional to their costs nor proportional to the price advances for all farm products nor for all commodities. Sheep producers are the only exceptions to this rule.

These facts are emphasized by Chart No. 5 on page 47 which compare the increase in wholesale prices for (a) beef cattle, (b) milk cows, (c) sheep, (d) hogs, (e) mules, (f) horses and (g) corn. All of these price curves use 1913 as a basis for comparison. As compared with 1913 the production of sheep decreased while that of hogs, mules, horses, milk cows and beef cattle slightly increased.

WAGES FOR AGRICULTURAL LABORERS

The story of wages for agricultural labor during the war period is quickly read in Chart No. 6 on page 47. In this chart the wages paid for farm labor without board by years as re-

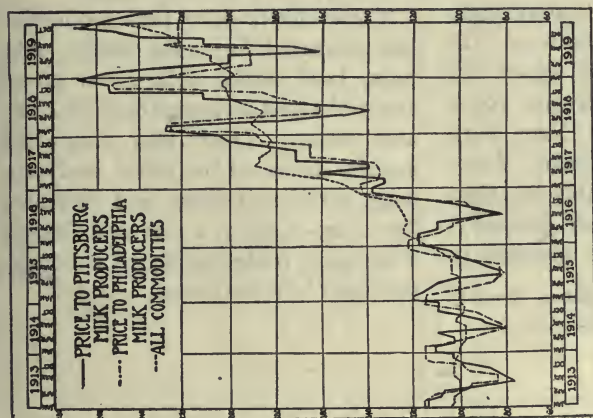


CHART No. 4

THE RELATIVE INCREASE IN THE PRICE OF MILK TO PRODUCERS IN THE PITTSBURGH DISTRICT AS COMPARED WITH THE INCREASE IN THE PRICE OF ALL OTHER COMMODITIES, 1913 TO 1918, AND WITH THE INCREASE IN PRICE TO PHILADELPHIA PRODUCERS. (The average prices for July, 1913, to June, 1914 = 100.)

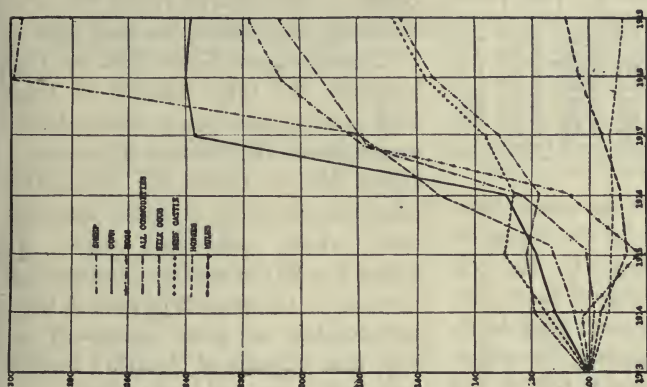


CHART No. 5

WHOLESALE PRICES FOR BEEF CATTLE, MILK COWS, SHEEP, CORN, HOGS, HORSES, MULES AND ALL COMMODITIES, 1913-1919. (AVERAGE WHOLESALE PRICES FOR 1913 = 100.)

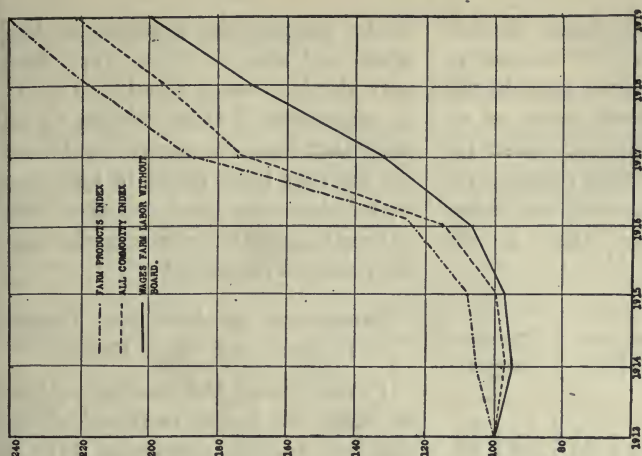


CHART No. 6

WAGES PAID FOR FARM LABOR WITHOUT BOARD COMPARED WITH INCREASE IN THE WHOLESALE PRICE FOR ALL COMMODITIES AND THE INCREASE IN THE WHOLESALE PRICE FOR ALL FARM PRODUCTS, 1913-1919. (WAGES AND PRICES FOR 1913 = 100.)

ported in the Monthly Labor Review is compared with (a) the increase in prices for all commodities and (b) the increase in the wholesale prices of all farm products. The wage taken for farm labor is the average reported for day labor for harvest and day labor not at harvest. The wages quoted are as follows:¹

	By the Month		Day Labor at Harvest (1)		Day Labor Not at Harvest (2)	
	With Board	Without Board	With Board	Without Board	With Board	Without Board
1913.....	21.38	30.31	1.57	1.94	1.16	1.50
1914.....	21.05	29.88	1.55	1.91	1.13	1.45
1915.....	21.26	30.15	1.56	1.92	1.13	1.47
1916.....	23.25	32.83	1.69	2.08	1.25	1.62
1917.....	28.37	40.43	2.08	2.54	1.56	2.02
1918.....	34.92	47.07	2.65	3.22	2.07	2.63
1919.....	39.82	56.29	3.15	3.83	2.45	3.12

It is difficult to get an exact statement as to increases in the wages in the different industries. In the iron and steel industry wages have just kept pace with the general price level. In the clothing industry, in which workers were underpaid before the war, wages have increased more rapidly than did the general price level. In most industries however wages did not keep pace with living costs. Chart No. 7 from the New York State Industrial Commission *Labor Market Bulletin* can probably be taken as typical for wage increases generally. This chart compares the increase in

weekly earnings for employes in both office and shop in New York State with the increase in retail food prices. A comparison of these two charts will show that wages for agricultural laborers not only have failed to keep pace with living costs but have also failed to keep pace with the increases in wages in American industries.

PRODUCTION OF AMERICAN FARMS DURING THE WAR PERIOD

Production of the leading products of American farms increased during the war period. Assuming 1913 as equal to one hundred Chart No. 8 on the next page shows for each year as of January first from 1913 to 1919 inclusive the total number of hogs, beef cattle, milk cows, sheep, horses and mules on the farms of this country. Chart No. 9 shows the production relatively for each of these years for corn, wheat, oats and cotton. In Chart No. 10 the relative increase and decrease in the exports of each of these commodities are given separately except that exports of "cattle" include both milk cows and beef cattle.

These charts show that production has increased for corn, wheat, oats, hogs, beef cattle, milk cows, horses and mules and decreased only for sheep and cotton. These also show that exports increased for wheat and oats, hogs, cattle and mules and decreased for corn, cotton, sheep and horses. The export trade has played an important part in price forces.

¹Average for the United States, Monthly Crop Reporter, December, 1919.

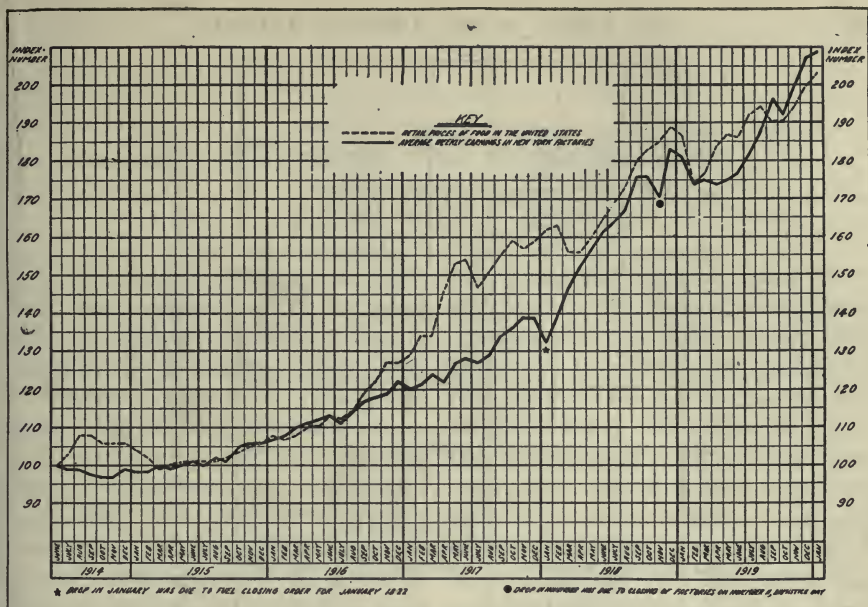


CHART No. 7

COMPARISON OF COURSE OF AVERAGE WEEKLY EARNINGS IN NEW YORK STATE FACTORIES WITH COURSE OF RETAIL FOOD PRICES IN THE UNITED STATES.

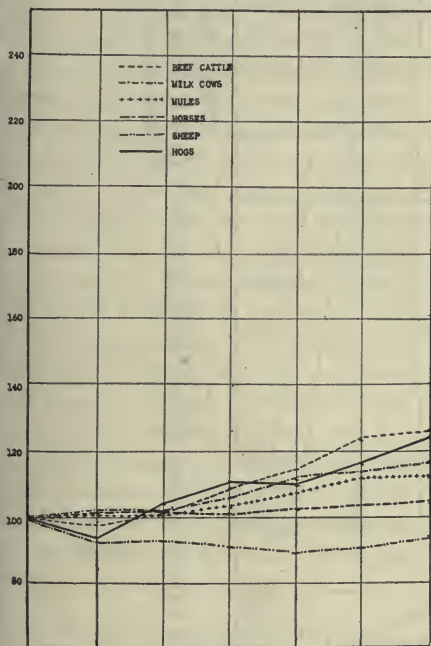


CHART No. 8

TOTAL NUMBER OF HOGS, BEEF CATTLE, MILK COWS, SHEEP, HORSES AND MULES ON THE FARMS IN THE UNITED STATES, 1913-1919. NUMBER IN 1913=100.

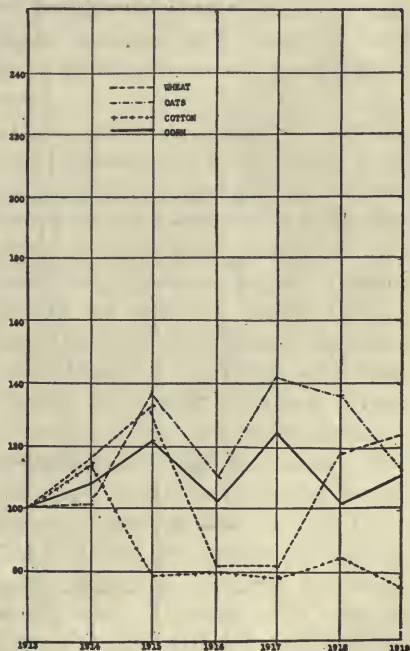


CHART No. 9

PRODUCTION OF CORN, WHEAT, OATS AND COTTON, 1913-1919. PRODUCTION IN 1913=100.

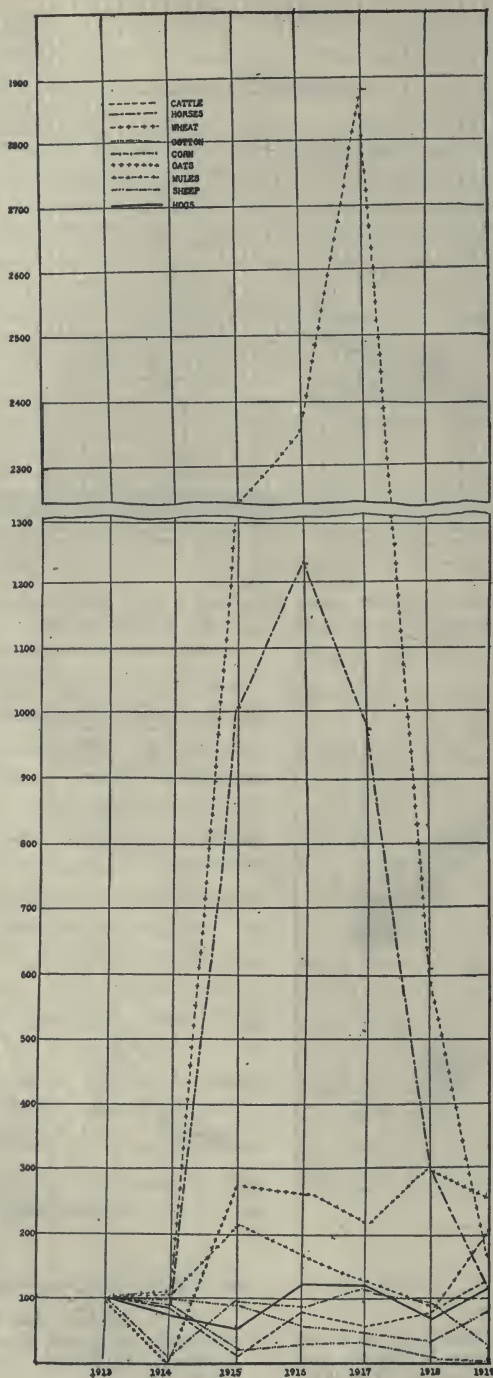


CHART No. 10

EXPORTS OF CORN, WHEAT, COTTON, OATS, HOGS, CATTLE, SHEEP, HORSES AND MULES FROM THE UNITED STATES, 1913-1919.
EXPORTS FOR 1913 = 100.

The After-War Fall in Meat Prices

By L. D. H. WELD

Swift & Company, Chicago, Ill.

DUN'S index number of wholesale prices shows that in January, 1920, the average wholesale price of meat was only 58 per cent higher than the average price for the year 1913, whereas the average wholesale price of all commodities was 105 per cent higher. Furthermore, since July, 1919, Dun's index shows that the wholesale price of meat had fallen 22 per cent (to January, 1920), whereas the average wholesale price of all commodities had risen 6 per cent during the same interval.

These facts are of peculiar significance at a time when the nation is complaining of constantly rising prices. It is not generally realized that during the past few months meat has been positively cheap as compared with other commodities, when pre-war prices, or prices of a year ago are considered.

The year 1919 was a decidedly abnormal one in the live-stock and meat trades. Prices reached unprecedentedly high levels during the first part of the year, only to be followed by spectacular declines which meant losses to many livestock producers, and also to the packers. What are the principal reasons for the remarkable price changes that have taken place? It is necessary to review conditions before and during the war before this question can be answered.

HOW THE WAR AFFECTED MEAT PRICES

Before the European war began, exports of beef from the United States

had practically ceased. Europe was getting her beef principally from South America, for the simple reason that cattle can be raised more cheaply in that part of the world than in the United States. Between the time that the import duty on meat had been removed in 1913 and the outbreak of the war, a little Argentine beef was actually imported into the United States. Europe was still depending on us for pork products (including fats) in considerable quantity, because the United States is the only country which has a large exportable surplus. South America and Australia do not raise hogs to any considerable extent.

During the war, the allied nations found it necessary to purchase their beef from the United States, because they could not afford to let their vessels make the long journey to and from South American ports. Foreign demand for our pork products also increased, and our exports increased tremendously. Coincident with this increase in export demand, there occurred a great increase in domestic production of cattle and hogs. The receipts of cattle in seven principal markets increased 82 per cent from 1914 to 1918; the receipts of hogs in eleven principal markets increased 36 per cent. This did not mean a decrease in the nation's stock of live animals, because the estimates of the Department of Agriculture revealed a continuing increase in the number of

animals on farms, at least up to and including January, 1919.

During the war, the domestic consumption of meat increased rather than decreased, in spite of the efforts of the Food Administration to curtail consumption. The campaign for saving undoubtedly kept the domestic consumption lower than it otherwise would have been, but it was largely counterbalanced by greater purchases on the part of millions of workmen who had received extraordinary advances in wages.

The net results of these factors was that during the war the prices of meats increased in about the same ratio as the prices of other commodities. Pork products went up more than the average; beef went up a little less than the average. This was the situation, in general terms, up to the time the armistice was signed in November, 1918.

THE BEEF-PRICE SITUATION

To explain the events since hostilities ceased it is necessary to consider beef and pork separately. As for beef, it was only natural that the disappearance of an unnatural foreign demand would bring down prices, and everybody expected this to happen. Export shipments continued for two or three months after the armistice, but as vessels became available for the long trip to South America and to Australia, beef exports practically ceased. The effect of this situation was felt in April, 1919, when cattle and beef prices began a considerable decline.

A bulletin issued by the United States Department of Agriculture on July 1, 1919, showed that wholesale

prices of beef decreased more rapidly, relatively, than the prices of live cattle. In other words, the differential between cattle prices and beef prices narrowed perceptibly. This was due partly to the fact that the prices that packers were able to realize on hides were advancing at the same time that cattle and beef prices were falling.

Cause of Advance in Hide Prices

Many people cannot understand why such a thing should happen, and say that the advance in hide prices must have been due to artificial manipulation. Such was not the case, however, because anyone who studies the situation will easily find out that the advance in hide prices was not peculiar to the United States. It was a world phenomenon, caused by large after-war demand for hides and leather by European nations, whose supply of leather had been used up, or worn out, during the war and in carrying on war operations. Except for about three weeks in May, Swift & Company lost money on cattle operations almost continually for about five months, including the sale not only of beef, but also of cured hides, refined oils and fats, and other cattle by-products. The same was true of the other large packers. Swift & Company's losses were so large during that period that the beef business for the whole year, 1919, showed a loss of about 70 cents per head of cattle.

Average prices of all grades of cattle and beef continued to decline through the rest of the year, and the Department of Agriculture's estimate for January 1, 1920, shows a decline in the number of cattle on farms. This indicates that the cattlemen, many of

whom have lost money during the past year, are adjusting their herds to peace conditions. The war demand stimulated production to such an extent that it resulted in such a large supply that it could not be marketed at a profitable price, after the export market disappeared. Cattle production is becoming adjusted to domestic demand, and will sooner or later bear its nominal relation to other agricultural crops so far as profitableness is concerned.

THE PORK PRICE SITUATION

The ending of the war did not have the same effect on hog and pork prices. It was expected that the central European nations, which had been in the habit of obtaining pork and fats from the United States before the war, would renew their purchases after the war ceased. There were extremely heavy marketings of hogs during the first two months of 1919, due partly to the guaranteed price of 17½ cents brought about by agreement between the Food Administration and the packers, and this kept the price from rising abruptly. After the first of March, however, European demand began to show itself, hog receipts fell off, the packers anticipated still further foreign demand, and the price became higher.

The price of hogs and pork products continued to climb until July, when live hogs were sold in Chicago for over 23 cents a pound—an abnormally high price. Then came the crash. This was due, not to the fact that Europe did not want our pork, but to the fact that Europe could not pay for it. Hog marketings became relatively light, but the packers had large supplies

of pork products in process of cure.

Early in August the British government appointed a commission to make purchases for England in the United States. This commission—in reality a single buyer for a large part of our exportable surplus—found that there was a considerable supply on hand in England and afloat, and announced that it would not buy much pork for two or three months. The bad financial situation in other European countries was reflected in the exchange situation, and exports suddenly fell off. The result was a precipitous decline in hog and pork prices during August, September and October.

The decline in hog and pork prices last summer and fall was perhaps the most spectacular that ever occurred—from over 23 cents to around 14 cents. It was a serious matter. Farmers lost money heavily. The packers lost heavily because of the decline in value of pork products. Swift & Company suffered a loss of over \$10,000,000 in six weeks on its stocks of pork products.

The Price of Pork Loins

One interesting feature of the decline in hog and pork prices was that the price of pork loins (from which are obtained pork chops and pork roasts) continued at its high level until November. This fact has been spread broadcast by the Federal Trade Commission as an indication that the packers were arbitrarily holding up the price of pork loins, even though the prices of hogs had tumbled.

The truth is that, when properly understood, the course of pork-loin prices furnishes as good a proof as any one could want that prices of meats are determined by conditions of supply

and demand, working out through competition. Pork loins are practically the only part of the hog that is sold as fresh meat, and constitute only about 12 per cent of all the meat from an animal. It has to be sold within a few days after the animal is killed (except for a small amount that is frozen) and therefore there is never any very great reserve stock. With light current supplies of hogs, and with heavy domestic demand, there was a relative shortage of this particular cut, and the price naturally remained high.

The prices of cured hog meats, which form the bulk of the total, were falling during this period, so that the average price of all pork cuts fell approximately as the price of hogs. All this time the packers were suffering the heaviest losses on their pork operations that they had ever experienced. The price of pork loins finally dropped substantially in November, when the marketing of hogs increased (as it always does at that time of the year), although a member of the Federal Trade Commission publicly announced that the drop in price was due to the publicity that he had given the matter!

EUROPEAN DEMAND AND MEAT PRICES

The future course of hog and pork prices is, of course, problematical,

because it depends largely on the European demand for our products. As already explained, this is a factor that does not have to be considered in the beef situation. Undoubtedly, Europe will begin to get straightened out somewhat, and if she gets in a position to spend money for our pork products, this will be a factor in keeping the price higher than it otherwise would be. Europe's unsatisfactory financial and industrial condition is reflected in the foreign exchange situation, which has caused loss to exporters, and which has automatically reduced exports.

RETAIL AND WHOLESALE MEAT PRICES

In conclusion, a word should be said about retail prices. It is undoubtedly true that they have not fallen as much as wholesale prices. That is generally the case on a declining market; retail prices lag. But they have come down substantially, as shown by the latest reports of the Bureau of Labor Statistics. It is perhaps unfortunate that retail prices do not fluctuate with wholesale prices. The day-to-day changes in wholesale meat prices are not reflected in retail prices; but when there are any decided swings upward or downward, retail prices sooner or later become adjusted to wholesale prices.

Price Fluctuations in the Woolen Industry

By KATHARINE SNODGRASS*

Federal Reserve Board, New York City

THE two questions which are probably of most interest in connection with wool prices at present are (1) whether present high prices are justifiable and (2) whether a reduction in them is likely. The first question cannot be answered positively without statistics of cost which we do not possess. The factors which have caused present prices, however, can be traced in a general way and the reader may judge for himself whether or not, in view of these facts, present prices appear justifiable. In the same way, only a tentative answer can be given to the second question noted above, namely, the likelihood of a reduction in prices. Involved in this question is the broader one of the future movement of prices in general and the relationship of wool prices to the general price level.

WOOL PRICES

The course of prices in the wool industry in the last ten years has followed the course of prices in general except that the fluctuations, particularly during the war, have been considerably more extreme. This ten year period may be divided according to the trend of prices as follows:

1. Summer of 1911 through spring of 1914—rising and falling prices.
2. Summer of 1914 through the

summer of 1916—continuous rise in prices.

3. Fall of 1916 until the armistice—very steep rise in prices.

4. November, 1918, through March, 1919—recession in prices.

5. Spring of 1919 until spring of 1920—rise in prices.

In order to account for the present level of prices it would be necessary to trace fluctuations from the spring of 1914 to the present time. Because of its bearing on the tariff question, which is again being discussed with regard to wool, the two periods (one of rising prices and the other of falling prices) prior to the war will be briefly discussed also.

Summer of 1911 through Autumn of 1914

The wool schedule of the Payne-Aldrich law, which was effective until December, 1913, provided considerable protection to the woolen industry. The fear that less favorable legislation might be enacted was given as the cause for the low prices in 1911. Again in 1913 uncertainty as to the provisions of the Underwood bill was given as the cause for declining prices. As a matter of fact, no change was made in the schedule until 1913 when, according to the Underwood law, raw wool was allowed importation free of duty and manufacturers of wool were taxed at a rate considerably below that provided by the Payne-Aldrich law. Uncertainty regarding the tariff

* Miss Snodgrass was formerly with the War Trade Board, Section on Woolen Goods; also expert on Prices of Wool and Wool Products for the Price Section of War Industries Board.

PRICES OF WOOL VERSUS ALL COMMODITIES, 1913-18

(Prices July, 1913-June, 1914=100)

Quarter	1913		1914		1915		1916		1917		1918	
	All Com-mod.	Wool	All Com-mod.	Wool	All Com-mod.	Wool	All Com-mod.	Wool	All Com-mod.	Wool	All Com-mod.	Wool
1st.....	102	108	100	98	100	108	118	129	152	173	187	257
2nd.....	100	106	97	98	100	111	123	135	177	194	190	272
3rd.....	101	104	100	100	102	114	125	141	187	222	197	283
4th.....	102	101	98	102	107	118	139	152	182	242	202	286

was undoubtedly one factor in the price situation of this period. However, in view of the fact that wool prices moved in such harmony with general prices, it seems very probable that the interaction of different parts of the price system was at least as important a factor in the situation as the tariff. The period from December, 1913, until the war began is too short to make possible any conclusions as to the effect of the removal of protection on prices. The period was one of declining prices not only in the woolen industry but also in general.

Summer of 1914 through Summer of 1916

As to the course of wool prices during the war, we have somewhat more systematic information than for the periods before or since the war. According to an index number constructed from the prices of sixty-five commodities including raw wool, yarns and cloth, the fluctuations in wool prices bore the following relationship to the fluctuations of prices in general:¹

The period dating from the outbreak of war until the summer of 1916 was one of steadily increasing activity in

the woolen industry. Several factors were influential in this connection: (1) orders of foreign governments for uniform cloth, (2) increasing domestic civilian demand as a result of increasing prosperity, (3) removal of foreign competition, and (4) importation of raw wool duty free. Foreign orders were not of large dimensions, as they were for ammunition and chemicals, but were sufficient to stimulate business and cause prices to rise. Estimated raw wool consumption in manufacture in 1915 was 56 per cent greater than in 1913, the entire surplus of raw material having been imported.

Meanwhile, prices in general did not begin to feel the influence of revival until the early fall of 1915. The year immediately following the outbreak of war was one of business uncertainty and prices in general remained almost on a level throughout the period. By the end of 1915, however, the effect of foreign demand for certain groups of commodities had stimulated general business, and prices as a whole began to rise.

The woolen industry was among the first to feel the effects of the general business revival in 1916. Prices of metals and chemicals had risen more rapidly due to the special foreign

¹ Index for all commodities is that prepared by Price Section of the War Industries Board.

demand for these commodities; but the increased prosperity resulting from this foreign business was very soon felt in the clothing industries. As a result, prices of clothing commodities were advanced considerably more rapidly than those of commodities in general. Whereas estimated wool consumption had increased 56 per cent above 1913 consumption in 1915, it increased 64 per cent in 1916 over 1913 and by the end of the year the industry was working practically up to capacity. Meanwhile the heavy demand for finished woollens caused very great competition for wools in the raw materials markets at home and abroad. Especially in the South American and South African markets, American buyers competed with foreign governments as well as with other American buyers for wools. At the same time the demand for labor from other industries and the increased cost of living necessitated wage increases. Fortunately there were no tariff duties further to enhance costs.

Autumn of 1916 until the Armistice

During the two years from September, 1916, to October, 1918, the price index number for the woollen industry doubled. During the same period all commodities advanced in price approximately 40 per cent. The main reasons for the increase in prices in the woollen industry during this period were: (1) demand of the United States government for very large quantities of woollen materials; (2) speculation on the part of wool dealers in 1917; and (3) continued civilian demand. A shortage of supplies was not felt until the spring of 1918 and did not influence prices even at that time

because the government then bought the country's entire supply of wool at prices of the preceding July. The movement of prices during this period differed as regards the raw material and the finished products. Raw wool prices made their spectacular rise between the fall of 1916 and the summer of 1917 and then settled at the high level. Wool products, on the other hand, rose more slowly but advanced consistently until the signing of the armistice. The cause of the rise in raw wool prices is to be found in the fact that the government suddenly placed orders for enormous quantities of materials; during 1917, for 25,000,000 yards of suiting, 23,000,000 yards of overcoating, 37,000,000 yards of shirting flannel, 60,000,000 pairs of socks, as well as proportionately large quantities of underclothing and blankets. Manufacturers taking government contracts bid against one another for raw materials and forced the price higher. At the same time dealers, in their efforts to control supplies, began to buy far into the future. The result would have been higher prices than prevailed if stocks had not been abnormally large. It is thus apparent that practically the entire rise in raw wool prices (amounting to 270 per cent of prices in the pre-war year) occurred before the government had begun its policy of price control. Raw wool prices stopped this spectacular advance in July, 1917, due to agreements among dealers. The government was not authorized to control prices until August of that year.

Government Control of Wool Prices

Government control of wool did not occur in earnest until the spring of

1918 although license control of both imports and exports had been instituted somewhat earlier. "Control" consisted of outright government purchase of the 1918 domestic wool clip, the requisitioning of imports which were suitable for military clothing, and the purchase of stocks held by dealers. In other words, for the remainder of that year the government owned the entire wool supply save that in the possession of manufacturers at the time control began. Control was instituted at that time because of the shortage of stocks prior to the bringing of the domestic clip to market. In making these purchases the government paid the price of the preceding July, which was only very slightly below the current market price and an exceedingly high price both as compared with pre-war prices and prices abroad.

Purpose of Government Control of Wool Prices.—It should be noted that control was not undertaken for the purpose of regulating prices of woollen clothing to civilians but in order to keep prices to the government for military supplies as reasonable as possible, and above all to insure to the government a sufficient quantity for military purposes. In so far as the latter point is concerned, control was undoubtedly successful. As regards the former point, there is little doubt that the War Department could have arbitrarily taken possession of the wool at a lower price than was actually paid. This policy, however, would have aroused the antagonism of a large section of the community, not only of wool dealers and growers but also of business men in general. As was pointed out above, unless some such

confiscatory policy had been pursued, prices could not have been less, as the greatest price advance had occurred before government control was authorized.

Monopoly buying in necessary commodities like food and clothing on the part of the government caused great hardships for the civilian public, as scarcity and high prices show. In the case of wool, although export and civilian demand had caused prices to rise originally, it was the United States government demand which was responsible for the greatest increases. Add to this the fact that, from April, 1918, until the armistice, there were no free supplies of wool for civilian use and the cause for high prices is apparent.

Price fixing in the case of yarns and cloth would probably have relieved the situation comparatively little as advances in these lines appear to have been (with the exception of yarns for a few months in 1918) merely proportionate to those in the raw materials. The speculation which occurred in the leading civilian cloth markets in the summer of 1918 was a natural outcome of the shortage of supplies.

November, 1918, to March, 1919

With the signing of the armistice the government was forced to decide whether to continue control or to relinquish it at once. Although the latter policy was followed in general, in the case of wool every effort was made to protect the industry so far as possible during the transition period. The government "cut" its prices radically in order to encourage the mills to buy; it promised the wool

growers that it would not sell wool during the summer when the domestic clip would be coming to market and, in spite of its huge holdings, allowed dealers to import raw wool freely from abroad.

In spite of these concessions, the industry was about 40 per cent idle through March, and normal conditions were not obtained until the summer months. During this period prices declined in all sections of the industry. The following table shows the course of prices of two leading grades of raw wool (one coarse and one fine) and of one grade of yarn, from October, 1918, to December, 1919, compared with the wholesale price index of the Bureau of Labor Statistics:

From a study of the table, it becomes apparent that the slight downward movement of prices in the woolen industry in the months follow-

ing the armistice was similar to the movement of prices in general. The period was one of business uncertainty marked more by industrial inactivity than by radical price cutting. This seems quite in accordance with good business judgment. There existed at that time very great buying capacity in the hands of the public. At the same time, stocks of civilian fabrics and clothing were low. There was every reason to believe that once the nervousness of business men could be dissipated, buying would commence on a large scale.

In the woolen industry the period was marked by very serious labor troubles. As prices were a factor in the situation, it seems pertinent to explain the connection. The unorganized workers in Lawrence, early in February, struck for a 48-hour week with 54 hours' pay. The strike came

WOOL PRICES AND THE GENERAL PRICE LEVEL

	Raw Wool		Worsted Yarn	Index Number
	Ohio fine unwashed delaine	Ohio 1/4 blood unwashed	1/40's 1/2 blood	Bureau of Labor Statistics
	Dollars per pound			1913 prices = 100
Oct., 1918.....	.74 ¹	.75 ¹	3.02 ¹ ₂	205
Nov.....	.74 ¹	.75 ¹	3.02 ¹ ₂	206
Dec.....	.68	.79 ¹	3.02 ¹ ₂	207
Jan., 1919 ².....	.66	.78	2.60	203
Feb.....	.69	.63	2.60	197
March.....	.69	.58	2.70	201
April.....	.70	.54	2.85	203
May.....	.70	.54	3.05	207
June.....	.73	.58	3.25	207
July.....	.78	.70	3.60	219
Aug.....	.83	.68	3.75	226
Sept.....	.83	.68	3.90	221
Oct.....	.83	.64	3.90	223
Nov.....	.85	.65	4.10	230
Dec.....	.88	.67	4.10	238

¹ Interpolated—no prices quoted.

² 1919 raw wool prices collected by Mr. Richard May.

apparently almost accidentally, following a demand on the part of the organized workers for a 48-hour week with 48 hours' pay, in which the unorganized workers were not willing to join. The strike lasted until May when the demands of the workers were granted. The main reason given by the manufacturers for refusing to grant the demands of the workers early in the strike was that the business situation—in other words, prices—was not such as to warrant wage increases. As business revived and prospects were favorable for continued advances in prices (and, incidentally, the work of more hands was needed), the demands of the workers were granted.

Spring of 1919 until Spring of 1920

The last year has been marked by advancing prices in all kinds of wool excepting coarse grades of raw wool. For these the demand has been light and as a result the government still holds millions of pounds bought during the war. The reason for the advance in prices is very much the same as for the advance in prices in general. During the war the purchasing power of large sections of the community has increased. This has led to a more

than proportionate demand for such a commodity as wool which combines the qualities of necessity and luxury. The reason that wool is abnormally high at present as compared with the general price level is in part due to this fact and in part due to the price increases of 1916 and 1917 which placed wool prices on a level much higher than the average.

PROSPECTS FOR A REDUCTION IN
PRICES

Considering the supply side statistically, we see no reason to expect a radical reduction in wool prices. At the same time, due to the fact that 1919 domestic production was slightly more than that of 1918 and imports only slightly less, there is no doubt a large stock of the raw material in the country. What the effect of this will be on prices depends largely upon how it grades as to quality. Present demand is largely for the finer grades of the material. On the demand side, so long as there is no considerable shift in business activity, there seems good reason to believe active buying will continue. However, as general prices recede, wool prices will decline also, but will probably remain on a higher level than average prices for some time to come.

Price Factors in Men's Ready-to-Wear Clothing

By SIEGMUND B. SONNEBORN

President, Henry Sonneborn & Co., Inc., Clothing Manufacturers, Baltimore, Md.

THE prices of men's ready-to-wear clothing of today are, in the main, determined by the following factors:

- 1—Cloth
- 2—Trimmings
- 3—Labor
- 4—Taxes
- 5—Amortization
- 6—Transportation charges
- 7—Overhead and profit

The changes which have taken place in the cost of these various items since pre-war times are as follows:

CLOTH PRICES

Pre-War Period.—Prior to the war the bulk of men's ready-to-wear clothing sold in America was retailed at from \$15 to \$25. An investigation made in 1911 disclosed that about 62½ per cent of men's ready-to-wear clothing was sold at \$15 to \$20 retail; about 25 per cent of men's ready-to-wear clothing was sold at \$25 to \$35; about 10 per cent was sold below \$15; and about 2½ per cent was sold above \$35. This investigation excluded such men's clothing as is made by custom tailors or sold by agencies representing made-to-measure houses. The investigation covered only ready-to-wear clothing sold by retailers throughout the country, and represented probably 85 per cent of all the men's clothing consumed in the United States. The de-

mand being so diversified, running the gamut of so large a range of prices, permitted the utilization of all raw materials usable for the production of cloth. The finest grades of wool down to the lowest grade of wool, as well as cotton and shoddies, were freely used in the manufacture of the large variety of cloth called for.

Present Time.—At the present time all this is changed. In pre-war times, a suit of clothes retailing from \$25 upward contained all the earmarks of better class tailoring. Just as soon as the price of clothing reached beyond this figure, the popular demand insisted upon the same earmarks of fine tailoring. By the end of 1918, cloth and trimmings had reached such a price as to practically eliminate cheap tailoring from the field of ready-to-wear clothing. It is axiomatic in the clothing industry that it does not pay to put cheap tailoring into high priced materials, and, vice versa, it does not pay to put high-priced tailoring into low-grade materials. In consequence, the entire popular demand has been concentrated upon the finer grades of cloth, ignoring to a very large extent clothing made out of cheaper grades of wools, such as quarterblood wools, or out of a combination of cotton and wool. The result of this tendency has been to inordinately advance the price of fine wool, as is evidenced by the following comparison of prices:

	1915 Per Pound	1920 Per Pound
Fine Australian wool.....	\$0.60	\$2.00
One-half Territory wool.....	0.70	1.75
Ohio Fine Delaine (Boston)....	0.66	2.30
Three-eighths South American..	0.40	1.35
Ohio quarterblood (Boston)....	0.52	1.07
South American quarterblood..	0.30	0.90

It will be seen from this that quarterblood wool in Boston which cost 52 cents in January, 1915, has just little more than doubled in price in January, 1920; while Ohio fine delaine wool, which sold at 66 cents in January, 1915, brought \$2.30, or $3\frac{1}{2}$ times the price, in January, 1920. This will also explain why certain fine worsted yarns, which in 1915 could be bought at \$1.15 per pound, are bringing \$5 per pound in 1920.

The rise of the finished cloth can be best exemplified by quoting the rise of price of a standard 11 oz. blue serge (D 3192, American Woolen Company), which cost in

1914.....	\$1.12	1918.....	\$2.92
1915.....	1.20	1919.....	2.62 $\frac{1}{2}$ *
1916.....	1.32	1920.....	4.50
1917.....	1.67 $\frac{1}{2}$		

—and a 16 oz. worsted (Metcalf Brothers, Range 19), which cost in

1914.....	\$1.67 $\frac{1}{2}$	1917.....	\$2.87
1915.....	1.85	1919.....	3.97
1916.....	2.20	1920.....	7.40

These two fabrics can well be used as standards for worsted fabrics.

As far as cassimeres are concerned, a standard 11 oz. cassimere costing \$1 in 1917 made out of the same material, cost \$3.55 in 1920 (LaPorte) and a standard 11 oz. cassimere costing \$1.25 in 1914 costs \$4 in 1920.

A standard kersey costing \$1 net in

* Temporary slump after the armistice.

1915 costs \$3.87 in 1920 (American Woolen Company. I-1826).

It is difficult to compare fancy overcoatings, but taking the same on an average, they show an increase of $3\frac{1}{2}$ to $4\frac{1}{2}$ times the price of 1914.

PRICES OF TRIMMINGS

The trimmings of a suit or overcoat consist of: linings, made out of either mohair, silk or cotton; of cotton or linen canvas; of haircloth; of sleeve linings, made out of cotton or silk; buttons; tape (for staying the edges); and sewings made out of cotton, linen or silk.

The following price changes have taken place in the raw materials:

	1915	1920
Cotton, per lb.....	\$0.07 $\frac{1}{2}$	\$0.40
Raw silk, per lb.....	3.15	18.00
Spun silk, per lb.....	2.50	14.00
22" cotton-back satin sleeve lining, per yd.....	.62 $\frac{1}{2}$	3.25
30" cotton-back satin, per yd.....	1.00	4.20
30" all-silk serge, per yd....	1.15	5.00
30" all-silk overcoat satin, per yd.....	1.80	7.50
30" all-silk Merveilleux, per yd.....	1.40	6.25
40" all-silk sleeve lining, per yd.....	1.25	6.00
40" cotton twill sleeve lining per yd.....	.07 $\frac{1}{2}$	.35
40" sateen sleeve lining, per yd.....	.10 $\frac{1}{2}$	.42 $\frac{1}{2}$
40" cambric sleeve lining, per yd.....	.15	.80
30" silesia, per yd.....	.07 $\frac{1}{2}$	.35
40" wiggin, per yd.....	.04 $\frac{1}{2}$	.25
No 60 3-cord sewing cotton	.73 $\frac{1}{2}$	3.12 $\frac{1}{2}$
No. 25 Star tape.....	1.96	7.50
32-line buttons.....	.62 $\frac{1}{2}$	2.50
50-line buttons.....	2.50	14.00
"A" sewing silk, per lb...	6.50	22.00
Linen canvas, per yd....	.12	.70
Cotton canvas.....	.07 $\frac{1}{2}$	.32 $\frac{1}{2}$

This covers fairly the component

items entering into the trimming schedule of men's ready-to-wear clothing.

The schedules of two prominent manufacturers, one a manufacturer of medium price and the other a manufacturer of finer goods, rose as follows:

PRICE INCREASES ON TRIMMINGS FOR SUITS

<i>For the Higher Grade Clothing</i>	<i>For the Medium Grade Clothing</i>
1915..... \$2.03	1915..... \$1.25
1916..... 2.03	1916..... 1.25
1917..... 2.08	1917..... 1.62½
1918..... 2.55	1918..... 2.68
1919..... 4.09	1919..... 3.55
1920..... 6.00	1920..... 5.25

PRICE INCREASES ON OVERCOAT TRIMMINGS

<i>For the Higher Grade Clothing</i>	<i>For the Medium Grade Clothing</i>
1915..... \$2.50	1915..... \$1.75
1920..... 11.00	1920..... 7.75

LABOR AND WAGES IN THE CLOTHING INDUSTRY

Contract System

Prior to the war period the outstanding feature as far as labor in the clothing industry is concerned was the recognized underpayment of the workers. The whole clothing industry was under the dominance of the contract system, which kept the manufacturer from contracting with the actual workers—except with a small percentage, such as cutters and trimmers—and permitted of the vicious system of a middleman, who, being given a certain price for his product, in order to make a living, stopped at no device to exploit his employees.

This system, known as the contract system, and sometimes referred to as "the sweatshop system," flourished particularly in such cities as New York, Boston and Philadelphia, sea-

port cities where the constant flow of immigrants made the continuance of this system possible. The immigrant, unable to speak the language, anxious to go to work at any price in order to maintain himself, deluded in great measure by the fact that American money and American wages apparently were so high when translated into marks, shillings, francs, rubles or whatever his native money might have been, was easy prey for the exploitation of the unscrupulous and sometimes hard-driven contractor.

No matter how earnestly inland cities, such as Chicago or Rochester, or such markets as Baltimore, might strive to establish a factory system, the clothing industry remained, up to the war period, under the dominant influence of the contract system and wages remained inordinately low.

It is for this reason that, when immigration was cut off through the war, when demand outstripped the manufacturing facilities and a nation wide scarcity of men's clothing made itself felt during the year 1919, the industry was compelled to place itself with one fell swoop on a level with the other industries of the country.

When the Department of Labor of the United States showed that it would take something over \$2,000 a year to maintain a family with five children in decency and reasonable comfort, the clothing workers of the country were not slow in grasping the significance of this statement and insisted that some such standard of wage should be granted to the men in the industry.

The workers of the clothing industry had been, for a number of years, welded together into a very powerful union,

The Amalgamated Clothing Workers of America, ably built up by a far-sighted leader. It was this union which, in the beginning of 1919, when the managers of industry thought that the close of the war would bring about a large amount of unemployment, and an opportunity for a liquidation of labor and reduction of wages, took the lead in demanding a curtailment of the working week and insisted upon the adoption of a 44-hour week, this being, to their mind, the application of a standard 8-hour day to a 5-day working week, with a half day for Saturday.

The employers in New York attempted to resist this demand and a long-continued strike ended with the victory of the workers. A series of wage adjustments took place all over the United States during the year, ending up with the general adoption of a minimum standard of \$40 for a full-fledged tailor, with higher prices for various specialized operations. Thus the wages of labor in the clothing industry have changed from the pre-war period as follows:

WAGES IN THE CLOTHING INDUSTRY

	1915 <i>Per Week</i>	1920 <i>Per Week</i>
Cutters.....	\$18 to \$25	\$41 to \$60.00
Trimmers.....	15 to 21	37 to 60.00
Cloth examiners...	15 to 18	35 to 42.00
Cloth spongers...	12 to 15	25 to 32.50
Pressers.....	15 to 20	45 to 75.00
Full mechanics....	15 to 21	40 to 70.00
Needleworkers....	6 to 12	25 to 40.00
Clothing examiners and bushelmen..	12 to 15	35 to 40.00

It will thus be seen that, since the pre-war period, wages in the clothing industry rose from 250 per cent to 350 per cent and that this rise has brought the level of wages paid in the

industry well up to the wage level of the best-paid industries of the country. The report of the United States Steel Company shows that the average wage of all wage earners in their plants for the year 1919 was \$6.12 per day. At the present time the wages paid in one of the leading clothing houses of the country indicate a rate of \$6.56 per day.

In the New York clothing market, the average price for tailoring a fine sack coat in 1915 was \$3.50. The same factories report an average cost of \$12.50 per sack coat for the same quality of work in 1920.

The advance of wages in Western cities was not quite as radical as in Eastern cities, owing to the fact that in pre-war times the wages paid in Western cities were considerably higher than those in Eastern cities.

While in pre-war times the average price of tailoring a coat ranged from \$1.25 to \$3.50, today the average price of tailoring a coat ranges from \$6.50 to \$12.50. The average price of tailoring a pair of pants ranged in pre-war times from 37½ cents to 75 cents; the average price today ranges from \$1.25 to \$2.50. While the average price of tailoring a vest before the war ranged from 25 cents to 75 cents, the same ranges today from \$1 to \$2.50. The average price of making an overcoat ranged from \$2 to \$5; today it ranges from \$7.50 to \$15.

Broadly speaking, the price of labor has increased from 3 to 4 times over pre-war costs, putting the industry on an economically sound basis, permitting a standard of wage which provides the workers with a good living and enables them to be more content and to be better citizens.

The charge made against a large portion of workers in the industry for their radicalism ignores entirely the fact that glaring underpayment of this industry of necessity made for discontent and called for a most radical change.

EFFECT OF INCREASED TAXES ON PRICE OF CLOTHING

The question of increased taxes and its bearing upon the price of clothing is one that affects the clothing industry in the same manner that it affects all other industries. Heretofore, taxes were negligible; today the taxes of nation, state and city are so largely increased as to become a very important consideration. In addition to this, the retailer who sells the clothing is taxed on his business, so that in his calculation he must take his taxes into account. Thus taxes provide a constantly increasing factor in the final price determination of clothing, heretofore absent.

AMORTIZATION COSTS

The present period has wrought a curious change in the clothing industry. The changed popular demand for finer grades of clothing and finer tailoring, above referred to, has forced upon fully 75 per cent of the clothing industry a profound change in their mode of manufacture and their structure of organization. As pointed out above an investigation made in 1911 showed that 72½ per cent of the men's clothing sold at retail cost below \$20. All this clothing may be described as "cheap" or "medium-priced" clothing, in which machine work predominated almost to the exclusion of hand work. With the rising price of materials,

the rising price of labor, the basic truth that it did not pay to put cheap tailoring into high-priced materials, about two-thirds of the manufacturers in the United States were forced to make improvements in methods of tailoring. Their staffs, accustomed to cheaper grades, had either to be changed or had to apply themselves to the production of more highly tailored garments. This necessitated the establishment of a great many "inside shops," because contractors were unwilling to undergo the hardships and losses incident to such change.

As one old and tried manufacturer stated, "In industry, change, in order to be effected without tremendous cost of money and nervous energy, must come over a working force like old age—gradually." Popular demand forced the clothing industry to go upon a higher basis of manufacture after the close of the war so suddenly as to cause violent adjustment in every phase of the business.

During the year of 1919, the clothing industry was kept busy investing in plant and machinery. Curtailed hours, curtailed production on account of quality, curtailed production on account of new methods of tailoring, forced upon the industry a tremendous investment in plant and machinery.

Heretofore, 50 per cent to 60 per cent (if not more) of the clothing was made under the contract system, the price agreed upon between the manufacturer and the contractor providing a very small pittance for amortization or management. Today, with the large investment of the clothiers in plants and machinery, amortization costs must be considered as never heretofore.

But from this change a very important indirect benefit has resulted. The very necessities of the situation have forced the employers in an industry heretofore seasonal to arrange their operations not only for intense but for steady production. Machinery and plant must be used continuously to be profitable investments and organizations once built up cannot be enlarged or contracted at will as under the contract system. An important economic step has been taken forward—the burden of steady employment in the industry has been emphasized and impressed upon the employer and the manager.

EFFECT OF TRANSPORTATION CHARGES ON PRICE OF CLOTHING

Transportation Charges.—The uncertainty of delivery has brought it about that a large amount of cloth as well as clothing today has to be shipped by express, both from mill to clothier and from clothier to retailer. Heretofore, the item of transportation hardly figured in the cost of clothing, but it may be fairly stated that where formerly probably 90 per cent of cloth and clothing was shipped by freight at a minimum of cost, today a very large percentage of both cloth from mill to clothier and clothing from clothier to retailer is shipped by express.

In addition to this, the greatly increased rates for both freight and express are piling a new and ever increasing item of expense upon the garment.

OVERHEAD AND PROFIT

That overhead and profit are figured on a smaller basis in the clothing industry today than before the war is borne out by the fact that, while cloth has advanced about 400 per cent, trimmings from 400 per cent to 500 per cent, labor from 250 per cent to 350 per cent, men's ready-to-wear clothing, both wholesale and retail, has only advanced 250 per cent to 300 per cent. This is exemplified by the fact that a well known brand of advertised clothing, that with tailoring corresponding to its present day standard of workmanship would have brought in pre-war period \$25 per suit, is now retailing at \$45 to \$70.

PRICES REASONABLE

Suits retailing in the pre-war period from \$35 to \$50 are now retailed freely at \$75 to \$100. Considering the fact that all men's clothing throughout the United States is improved in quality, in workmanship, in appearance, in durability, considering the fact that the new development in the industry does away with the old sweatshop system and makes for steady employment of the workers, eliminating the extremes of unemployment, which have been such a serious menace to our national prosperity in the past, considering further the advantage accruing to the nation from a body of workers comprising a quarter of a million men and women, now upon a wage basis of decency and fair comfort, the present cost of men's ready-to-wear clothing may well be considered as entirely reasonable.

The Housing Shortage and the Supply of Building Materials

By HOMER HOYT

Delaware College, Newark, Delaware

THE United States is over a year behind schedule in her building operations! It would be necessary to double the output of building materials and new homes in a single year in order to make good this building deficit. The physical supply of basic raw materials is amply sufficient for the most ambitious housing program, but the high cost of construction in proportion to the returns is checking a building boom that would otherwise quickly fill the vacuum! These are the main head lines of the building situation in the United States in the year 1920.

THE HOUSING SHORTAGE

Decline in Building

The housing shortage is the natural result of the decline in building that began with our entry into the war in 1917 and that continued until the latter part of 1919. The government war-building program of \$1,500,000,000 did partially offset the decline in private building, but the construction of cantonments and other structures for military purposes contributed little to the maintenance of the peace establishment, and hence may be ignored in this discussion. We are confronted today with a housing shortage that is reflected in daily appeals for more homes, high rents, over-crowding, plans to build portable houses, and official conferences to stimulate building. Although the lack of dwellings is becom-

ing an acute want, this building deficit cannot be measured in exact terms. The number of new houses needed cannot be computed by taking a census of the homeless, because the "shortage" has not been great enough to force many American householders to sleep in the parks; it has merely crowded the nation into closer quarters—into fewer rooms and into dark tenements that were normally vacant.

The best light on the extent of the building vacuum can be obtained by computing to what extent the building in the last three years has fallen short of the building in three normal building years. Assuming that our population and building needs have increased during the last three years at a normal rate, the housing shortage will then be shown by the amount by which the actual building operations of 1917, 1918 and 1919 have failed to keep pace with this normal demand. Even this method of computing the housing shortage will bring us to only approximate conclusions.

The final estimate of the housing shortage must be compounded from two other estimates, in each of which lurk the chance of error. First, in the absence of any official census of the total number of buildings in the United States and the total amount of annual building in the nation, we must rely upon the official statistics of the *United States Geological Survey* which cover

building operations in the leading cities only. These statistics, while excellent for a comparative study of building in cities, might not show the trend of new construction in the country districts. The writer believes, however, that the statistics of the *United States Geological Survey* may be taken as representative of building in the entire nation—city as well as country—because the main variations in the amount of building during the war were caused by congestion of war work in certain sections of the country and not to any difference between urban and rural districts. Thus the building shortage was acute along the Atlantic seaboard in both city and country districts while building activities were almost normal in some of the city and country districts of the south and west. Since the building statistics of the *United States Geological Survey* include cities in all sections of the nation, it is believed that they represent a fair average of building operations. These statistics do not include construction for military purposes, for which no permit was required, but such building should properly be excluded from a discussion of normal building.

Secondly, since the building statistics of the *United States Geological Survey* do not show the actual number of houses, but only the value of the building permits, allowance must be made for the increased value of permits that was due entirely to the change in the price level since 1914. In other words, comparative statistics for the last four or five years in terms of dollars are misleading, because it takes more dollars in 1919 than it did in 1913 to represent the same physical volume of building. Yet physical volume of

building is what we must determine in dealing with a housing shortage, for a house that costs \$5,000 today will not shelter as many as two houses built of the same materials four years ago at a cost of \$2,500 each.

INCREASED BUILDING COSTS

How shall we weight the value of permits to allow for increased building costs? The average prices of twenty-nine leading building materials, computed by the Price Section of the War Industries Board,¹ had advanced 37 per cent over their pre-war average (fiscal year ending June 30, 1914) by the end of 1916, 69 per cent by the end of 1917, and 92 per cent by the end of 1918. The prices of building materials of the Bureau of Labor show that the advance had reached 136 per cent by November, 1919.

The cost of building probably has not advanced as much as the prices of building materials, however, because the wages of building labor did not respond as quickly as other wages to the upward price movement. The Division of Public Works of the United States Department of Labor has made an estimate of the increased cost of building since 1914, which includes the average costs of all types of buildings. These figures will be used to discount the value figures of the *United States Geological Survey*.

Taking the value of building permits for the year 1913 as equal to normal for the country or par of 100 and also putting the building costs of that year as equal to 100, we can thus compute the decline in building that has occurred since 1917:

¹ Prices of Building Materials, 1919. Bulletin No. 6.

	Value of Permits ² (in 143 to 151 Cities)	Weight for Cost of Building ³	Estimated Building Operations for the en- tire United States	Deficit in Build- ing for the en- tire United States
			Per Cent Normal	Per Cent Normal
1913	\$859,657,250	100 ⁵	100	0
1914	785,525,746	100	..	..
1915	799,735,860	100	..	..
1916	1,024,211,675	117	..	..
1917	687,415,605	139	60	40
1918	430,014,365	159	31	69
1919	1,281,000,000 ⁴	200 ⁵	75	25
Accumulated deficit			134	

² United States Geological Survey.

³ United States Department of Labor, Division of Public Works: *Economics of Construction Industry*, p. 87.

⁴ United States Chamber of Commerce.

⁵ Estimated.

Thus the housing shortage is equal to one and a third years of normal building. While this estimate is only an approximation, it is a minimum estimate of the building shortage. If prices of building materials, as computed by the Price Section of the War Industries Board, were used to indicate the rise in the cost of building, the accumulated deficit would be 167 per cent or one and two-thirds years of normal building. The average shortage of buildings for the country as a whole is probably equivalent to slightly more than the amount erected in a normal year, because, as we shall see later, the production of leading building materials is also about a year in arrears.

Other estimates of the housing shortage have been made in terms of the number of houses. The Forest Service estimates that we lack 450,000 houses. Other authorities place it as

high as 800,000 or 1,000,000. In view of the wide variation between the size and cost of small frame cottages, rooms in family hotels, apartments, tenements, etc., it is hard to define any standard "house" as a unit of measure. We shall therefore content ourselves with the estimate of the housing shortage in the terms already given, namely, that we lack slightly more than the number of buildings that were finished in a normal year.

SUPPLY OF BUILDING MATERIALS

What is the supply of building materials that is available to meet the deficit caused by the lack of over a year's building? If it were necessary to take an exhaustive inventory of all the hundreds of kinds of raw and partly finished building materials, such as cement blocks, door knobs, metal lath, in-a-door beds, plasterboard, flooring, finished doors, window sashes, etc., we would have tables of statistics sufficient to fill this entire volume. But such an elaborate stock-taking is not required because it would prove little even if prepared. Building materials are produced as they are needed; the supply is forthcoming when there is evidence of a demand. Building materials are not grown like annual crops and stacked up in warehouses to be sold to the highest bidder. Consequently, the quantity of finished building materials, now on the shelves of dealers, has little bearing on the quantity that could be produced if a building boom stimulated production.

We need only look to the amount of standing timber, the quantity of cement rock, the volume of common clay, the deposits of limestone and iron ore. Mother Earth is the primary

source of our building materials. If her cupboard is well-stocked, it will take only time, labor, and plant capacity to bring forth all the buildings we need. It can safely be said that the supply of these basic materials is sufficient for all housing requirements that will arise now and for many years to come. There is an almost unlimited supply of clay for the making of common brick, cement rock is almost equally abundant, the coal for burning clay into brick and cement rock into cement will last a century at least, the iron ore for structural steel, metal lath, hardware, etc., will not be exhausted within the lifetime of the unborn children of our unborn children; lumber is beginning to show signs of exhaustion, but we need not worry about the lack of lumber for any building needs that will come within the next ten years. The supply of basic raw materials is thus sufficient to double, if not to triple, the output of buildings in a single year.

What labor and plant capacity is available to work up this added supply of raw materials? It has been estimated that there is an excess plant capacity of 50 per cent in the lumber industry; there is a like excess capacity in the case of cement, brick and stone, while the steel mills could easily produce more structural steel by the curtailment of other steel products. If the building demand is important enough to attract labor from other industries, labor can be supplied in sufficient amounts for all the unskilled work. Even enough skilled bricklayers, carpenters, etc., could probably be found if the abnormally large building operations were distributed evenly over the year and

not piled up in one peak load. Thus demand for building would start the ball a-rolling that would pile up sufficient building materials by the end of this year to enable us to do two years' building in the one year of 1921.

Cost of Building Materials

But demand for building—aye, there's the rub. What contractors will put up buildings at double the 1914 costs, when rents are not allowed to advance to cover this increased cost of building? Who will erect a house which is only a little newer and a little better than one costing just half as much? The majority of people still have hopes that prices will come down and as long as they feel that way they are loathe to invest in permanent structures at high cost that may later be matched by equally good structures at much lower costs when prices come down. Thus the high cost of building materials is the cause of the contraction of building activities. Since that high cost is primarily due to the high wages paid to labor in the building industries, such high cost will not fall much with increased production. The raw materials exist in abundance, but it takes labor to fabricate them into buildings, and this labor is very expensive. Herein lies the kernel of the problem.

PRODUCTION OF LEADING BUILDING MATERIALS

The extent to which the production of building materials and likewise the demand for building materials has fallen off during the last three years may be observed by a study of three leading building materials: lumber, cement, and common brick. By taking

the physical production of each of these basic materials during the last three years and comparing the production during these years with that of a normal year, we can ascertain the amount of the deficit in the case of each one.

Lumber

The normal annual lumber production of the United States is about 40 billion board feet. Allowances must be made, however, for the fact that the lumber consumption in this country is declining and also for the excess of exports over imports which amounted to two billion feet a year before the war. The normal consumption of lumber in this country would therefore not exceed 38 billion feet. Since there has been practically no surplus of lumber exports over imports during the last three years, the entire production was consumed in this country during those years. Taking 38 billion board feet as the normal production of lumber, the lumber deficit is shown by the following table:

Year	Lumber Production	Deficit
	M Board Ft. ⁶	M Board Ft.
1913	38,387,000	
1914	37,346,023	
1915	37,001,656	
1916	39,807,251	
1917	35,831,239	2,200,000
1918	32,700,000	5,300,000
1919	33,500,000 ⁷	4,500,000
Accumulated deficit		12,000,000 ⁷

To this deficit of 12 billion board feet must be added the six billion board feet that were used for cantonments, airplane stock, etc., which contributed practically nothing to normal building. This would make a total lumber

deficit of 18 billion feet or about one-half of the annual lumber cut. Since it is estimated that only about one-half of the lumber cut is used directly for houses and building, this lumber deficit is equal to the amount of lumber that goes into building in a single year. Of course it cannot be assumed that the lumber deficit is building lumber exclusively, for during the war there was a falling off in the consumption of lumber for making furniture, box cars, and many other articles besides houses. Nevertheless, a lumber production of 60 billion feet in a single year would be required to make good the deficit of wooden houses and other wooden articles. The supply of standing timber and plant capacity in the lumber industry is easily adequate for this task, but high lumber prices will prevent such a heavy demand from accruing in one year.

Cement

In 1913 cement production exceeded all previous records with over 92,000,000 barrels, but this mark was again surpassed in 1917 when the figures reached almost 93,000,000 barrels. Since cement production has been continually increasing in normal years, it is fair to take 92,000,000 as a basis for computing the deficit. The cement shortage is then shown by the following table:

Year	Production	Deficit
	(Barrels)	(Barrels)
1913	92,097,131	
1914	88,230,170	
1915	85,914,907	
1916	91,521,198	
1917	92,814,202	
1918	71,081,663	21,000,000
1919	80,287,000	12,000,000
Accumulated deficit		33,000,000

⁶ United States Forest Service.

⁷ Estimated.

To this deficit of 33,000,000 barrels must be added the 11,000,000 barrels used for military purposes, making a total cement deficit of 44,000,000 barrels. To wipe out this accumulated shortage in a single year would require a cement production of 135,000,000 barrels. While the raw materials and plant capacity are capable of furnishing this amount, the demand for that amount of cement is not likely to develop in a single year. An increase in cement production at a rate more rapid than other building materials is to be expected, however, in view of the relative cheapness of cement.

Common Brick

Common brick production and consumption has been declining so that although production reached eight billion brick in 1913, the normal average is probably not over seven billion brick. Allowing seven billion brick as the normal production, we find the following common brick deficit:

Year	Production ⁸ M Brick	Deficit M Brick
1913	8,088,790	
1914	7,146,571	
1915	6,851,099	
1916	7,394,202	
1917	5,864,909	1,100,000
1918	3,556,519	3,400,000
1919	4,500,000 ⁹	2,500,000

Accumulated deficit	7,000,000
---------------------	-----------

Since very little common brick was used for military purposes, the net deficit remains at about seven billion brick or an amount equivalent to one year's production. To catch up with present and deferred building needs a common brick production of 14 billion brick, would be required but such

a production is not likely to be demanded in a single year.

Thus, the shortage in the production of three leading building materials is about equal to the amount of each of these materials consumed in building in a normal year. Only part of the cement and lumber production being used for building, a 50 per cent increase in the annual production of these materials would fill the building vacuum. Since all of the common brick is consumed in building, the deficit is equal to 100 per cent of one year's production. The curtailment of brick buildings during the war was also more marked than in the case of lumber and cement structures; so there is a greater real deficit in the case of common brick.

CONCLUSION

The so-called building deficit might conceivably never be entirely met. With the cost of building materials today 135 per cent higher than the pre-war level, space will be economized to a greater extent than when buildings were cheaper. In the pre-war days there were always the unoccupied "marginal" houses, the dark apartments that were seldom if ever rented, the extra bed-room for guests, the inside hotel rooms for which people seldom registered, the cheap lodging houses that were never filled to capacity. The scarcity of buildings has forced families to accept the dark apartments they formerly passed by with disdain; lack of hotel accommodations compels the late-comer to sleep in the parlor or in a boiler room; some families give up their "extra" rooms to roomers, while other families dispose of their homes and confine them-

⁸ *United States Geological Survey.*

⁹ Estimated.

selves in small furnished apartments. The higher cost of space will cause the nation to crowd into closer quarters, because it cannot afford to spread out and maintain as many vacant rooms as formerly. We will neither have as much space or as many new buildings if the costs of building continue to rise. Old buildings that would be torn down when new buildings were cheap will be patched and preserved for further service when a new building is a luxury.

Factory building will proceed regardless of construction costs. The expense of the factory building is only a small fraction of the cost of the finished product and, when expanding sales require a larger factory, buildings must be erected or the profit on the increased sales will be lost. The opportunity to crowd factories into smaller buildings and to economize space is not as great as in the case of private dwellings, for factory space has already been economized as much as possible to save heat, light, insurance, ground rent and interest. Neverthe-

less, the higher cost of building may put a further premium on night shifts.

In the course of time, however, building will probably resume normal proportions whether prices remain where they are or whether prices fall. A financial depression and a fall in the prices of building materials will, of course, stimulate a rush of new building. On the other hand, if prices remain where they are, the depreciation of the dollar will gradually become a commonly accepted fact. People will cease to object to paying twice as much rent when new buildings are erected at twice the cost of old buildings, and when they receive twice as large an income. When the prices of everything have advanced to a new level and the adjustment is complete, a dollar spent for building will go as far as a dollar spent for anything else. Then the nation will expand into its more commodious quarters again. Under any view of the situation, a great number of new buildings looms on the horizon.

Housing and Building Conditions

By ERNEST T. TRIGG

Vice-President, John Lucas Co., Inc., Philadelphia, Pa.

IT has been estimated that in the United States we are short, approximately, a million dwellings. I use the term "dwellings" to designate places of residence for families, including, thereby, apartments and other group-housing as well as houses. It is difficult to determine to a nicety what our national shortage is at the present time. An accurate survey would probably show it to be materially greater than the above approximation. There are several reasons for the shortage. During 1917-18 while we were engaged in the World War all of the available man power at home was required for ship building, munitions making, food production and other war necessities. During this period, there was practically no civilian construction, buildings could only be erected upon permits issued by the government and no permits were issued except for necessary construction contributing directly to the war. Another reason for the shortage, or to put it another way, for the demand for dwellings which now exists is the fact that due to high wages workmen are demanding better types of homes, which demand is equivalent to providing for that much addition to our population. Then, too, we have lost a full year of opportunity since the signing of the armistice, for during 1919 housing construction was woefully behind even normal requirements.

The first six months of 1919 saw

practically no progress in this direction, due to uncertainty as to price levels and the rather strong feeling on the part of many that prices would immediately decline. In the summer of 1919 the public, generally, came to realize that high prices were going to last for some time at least and in the fall some construction work went forward, much of it at higher prices than existed in the spring. Here are some figures to show the condition: The average number of dwellings constructed annually for the twenty-seven years from 1890 to 1917 was 352,000. During the last seven years of that period, 1910 to 1917, the annual average was 430,000. In 1918 the total was 20,000; in 1919, 71,000. It has been stated on reliable authority that there are, at the present time, 121 families for every 100 homes in the country. If the average annual requirement for the next five years remained only the same as the average production from 1910 to 1917, that is, 430,000 homes, and figuring on taking up only the shortage of 1918-19, we must construct practically three million new homes during that period only to find ourselves at the end of five years in the same condition we were in at the end of 1917, when there were 115 families to 100 homes. I do not hesitate to say that under present conditions and in view of the large amount of construction work of other kinds, such as factories, warehouses, public

buildings, institutions, roads, etc., required we cannot possibly produce anything like such an amount and unless something substantial is done promptly to help the situation we shall find a very bad condition made much worse. There are three important problems which should be met and solved without delay:

INCREASED HOUSING CONSTRUCTION

Important Problems Involved

First, Financing.—The amount of home building with finances entirely provided by the owner is relatively unimportant. Money must be provided for home building which can be retired gradually over a term of years. Before the war, funds could ordinarily be obtained from the usual financial sources for building purposes where the ground was clear and sometimes, where the risk warranted, practically all of the funds, including the ground value, could be borrowed. Today, projectors of building operations must have the ground clear and in many cases they must provide 25 per cent to 33½ per cent of the cost of construction before they can borrow the balance needed, while in other cases the financing is limited to 50–60% of the 1914 valuation. This condition is due to the present high cost and the feeling on the part of financial interests accustomed to providing funds for such purposes, that before the debt is liquidated values will recede to a point where there will not be sufficient equity in the property to protect the loan. As one means of relieving this situation it has been suggested that Congress might well make the income on real estate mortgages up to a total of \$45,000 (mortgage value) exempt from federal taxes.

This would make such mortgages peculiarly attractive to small investors and would undoubtedly release large sums of money in the aggregate, now being carried in savings banks or in other relatively inactive ways. It has been argued that such legislation would deprive the government of a substantial amount in annual taxes. The answer is that it is quite likely that it would not cost the government anything but would, on the contrary, materially increase its revenue in time, because the money released by such an act would immediately go into permanent improvements which would, in the long run, provide their full share of taxation. But over and above the question of revenue is the importance of providing means whereby our people may be housed. Bills have been introduced in both houses of Congress to accomplish the tax exemption on real estate mortgages in a limited amount. It is to be hoped that they will be enacted into law.

Second, Standardization.—Already, much has been accomplished in the construction industry in this direction. The progress so far, however, has been more along engineering lines in big construction than in home building. The building of homes can be speeded up materially by the standardization of various factory products made to definite pre-determined sizes ready to be fitted into place on the job. Too much of the workman's time is employed in fitting parts which might and should come to the work already for assembling. There is no thought of standardizing architecture. It would be "penny wise and pound foolish" to advocate similarity in construction style. This would remove the artistic

and pleasing from our communities and eliminate individuality. But the general design need not be influenced by the many construction materials which could be of sizes known to the architect when plans are being drawn. Through the National Federation of Construction Industries which is now at work on this task, it is hoped that definite progress may soon be made in this direction.

Third, Labor.—This is by far the most important factor involved, in its relation to production. I shall refer to it but briefly. It is an all important subject in industry today. There is a shortage in our basic industries at the present time of approximately four million men. In normal times immigration adds annually 400,000 to 500,000 workers to our payrolls; during the war this was all cut off. In 1919 the emigration exceeded immigration. It is hoped that Congress, realizing the depletion in labor's ranks, will soon enact that kind of intelligent legislation which will encourage the right kind of law-abiding workers to come to our shores. Notwithstanding the shortage of actual workers, industry is confronted with a reduction of from 30 per cent to 40 per cent in the daily production of the workers we have as compared to pre-war, man-hour production. This is due to a general letting down on the part of labor that is retarding the output of supplies of all kinds. As an illustration, bricklayers who formerly laid from 1,500 to 1,600 bricks per day, now lay only 700 to 800. In addition to the reduction in daily production, demands by workers are now being made for five-day weeks as well as for less hours per day. The great shortage in housing

can only become more serious from year to year in the face of reduced production. I do not believe that more than a meager percentage of our workers are influenced in their attitude by radical or revolutionary ideas. I do believe that the right sort of education to that big majority, who are today thoughtlessly retarding production, will cause them to realize their responsibility in the situation and have the effect of getting from them all of the production and the work possible up to the point where it is not injurious to their well-being. The workmen of this country owe it to themselves and to the nation to produce to the greatest extent reasonably possible. The present high prices are a result of a demand far in excess of the supply. The only way this condition can be changed is to increase the supply; that means more production. Attempts made under federal administration direction to standardize prices failed. Any effort to regulate or standardize prices in a national way in peace times will create an artificial condition and must fail. Regulating prices by industrial groups is illegal and cannot be done. No substitute has so far been found for the law of supply and demand which will effectively and permanently regulate prices for the law of supply and demand. It is the natural common sense basis on which to operate. More production on the part of every one will spell a greater supply and make it possible for the demand to be more adequately met. Summed up, more encouragement to the construction industry in a financial way, elimination of unnecessary work on the job through standardization, and more production by each work-

man will go a long way toward helping solve our national housing problem and enable the construction industry to acquit itself creditably in this its hour of great responsibility to the nation's welfare.

The following quotation from Ruskin contains a sentiment peculiarly fitting at this time:

FOREVER

Therefore when we build, let us think that we build forever. Let it not be for present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say as they look upon the labor, and wrought substance of them, 'See this our Fathers did for us.'

Lumber Prices

By R. C. BRYANT

Yale University

PRICE CYCLES

THE studies made of lumber prices of past decades have not been sufficiently exhaustive to enable one to trace the exact history of the movement.¹ However, the studies that have been made are very suggestive, since they indicate that relative lumber prices move in cycles. Two of these cycles have been noted in the past, namely, between 1860 and 1880, and again from 1880 to 1916. Present evidence points to the beginning of a third similar cycle.

These cycles are characterized, during their early years, by an increasing divergence in the relative lumber price level from that of the "all commodities" group, followed during the later years of the period by a decline in the rate of increase of the lumber price line, the latter gradually approaching the "all commodities" group level at the end of the cycle.

SHIFTING CENTERS OF LUMBER PRODUCTION

The beginning of the divergence in the rate of increase between the two groups, in each cycle, is nearly coincident with the shifting of the center of lumber production from one section of the country to a more distant one.

Production in Northeastern States.—

¹ Some difficulties present themselves in the study of early lumber prices because of the fragmentary character of the price records and because of the many changes in grade designations which took place previous to the past two decades.

The relatively rapid increase in lumber prices as compared to the "all commodity" group came at a time when lumbering was losing its local character and becoming a national industry. The centers of production of the Northeastern States failed to meet the new demands made upon them and the lumber industry, in the course of its expansion, began to move to more distant interior points in New England, New York, Pennsylvania and the pineries of the Lake States. With this shift in the producing centers there came also a westward movement of the center of population.

Although there was an abundance of raw material in the country, the supply near the markets was less abundant. The length of haul to market having increased, transportation costs became a more important factor in the delivered price of lumber and it was early reflected in a rather rapid rise in the relative price of lumber. This latter tendency was not so evident in the "all commodity" group since there was not a similar shift in the source of raw materials required in production.

Production in the Lake States.—From 1870 to 1880 there was a marked increase in the lumber producing capacity of the country, especially in the Lake States, and since the center of population was gradually moving westward there was a reduced haul to market for the lumber used by a greater per cent of the consuming public. On the other hand, the move-

ment of the center of population westward meant a shift away from the regions where many commodities, other than lumber, were manufactured, hence there was an increasing length of haul and greater transportation costs. The latter condition caused an increase in the delivered cost of many commodities and near the close of the cycle brought the relative values of the groups closer to each other than they had been at any time since the Civil War.

Production in the South and West.—Lumber prices about 1880 began to manifest the same tendencies that were evident during the early part of the first cycle. In the meantime the Lake States had become the center of lumber production and the center of population had shifted to Indiana, thus bringing about a new readjustment in the distribution of lumber. Although lumber manufacture was still at its height in the white pine region, there were indications that a relative lumber shortage was not far distant and operators were beginning to make investments in the West and also in the Southern pineries. The divergence in the relative prices of lumber and the "all commodity" group appears to have continued up to about 1907, following which time the rate of divergence decreased and more closely followed the general trend during the period from 1873 to 1880.

There is some evidence that we are entering upon a third cycle in the lumber price movement. The Bureau of Labor Statistics for the year 1919 shows that lumber and building materials advanced during the year 66.5 per cent; cloths and clothing 49.5 per cent; house-furnishing goods 48.5

per cent; food prices as a whole 22 per cent; fuel and lighting 8 per cent, and metal prices 3 per cent. Whether this heavy advance in building materials, including lumber, is the forerunner of a new cycle in the lumber price movement or merely an incident due to the disturbed building conditions as a result of the war cannot, as yet, be stated.

Recent Changes in Production Centers.—We are now passing through a change in the lumber industry similar to that which occurred shortly after the Civil War and after 1880, namely, the shifting of the center of maximum production from one region, the Southern pineries, to the forests of other regions, the Inland Empire and the far West. It is reasonable to suppose that the transplanting of the center of maximum production from the South to the West, 2,000 miles distant, without a similar transfer of the center of population, will again bring about a greater relative increase in the value of the "lumber" group as compared with the "all commodity" group.

CHARACTERISTICS OF PRICE MOVEMENT

Prices Prior to 1913

The lumber price movement previous to 1913 displayed fluctuating tendencies, short periods of high prices being followed by comparatively long periods of low prices during which the returns to the industry were either low or negligible. The changes were more pronounced in general utility woods, such as Southern yellow pine and Douglas fir, and less apparent in specialty woods such as cypress, redwood and Eastern white pine.

One of the chief causes of the fluctua-

tion of lumber prices was the rapid and apparently unwarranted expansion of the lumber industry, which led to over capitalization and excess mill capacity, which in turn resulted in over production and exceedingly keen competition not only between the various producing regions but also between manufacturers within a given region.

Lumber prices began to rise rapidly about 1897, the demand for lumber being stimulated by the rapid industrial development of the country. An era of marked expansion of the lumber industry followed and buying of stumpage became so brisk that the price of raw material early reached a value which absorbed the greater part of the profit resulting from the higher prices of lumber.

The era of high prices for lumber culminated during the panic of 1907, and the rapid drop in value following this period led to many financial failures and to general demoralization in the industry. The demand for stumpage fell off and the chief means by which the majority of stumpage holders could secure sufficient funds to meet current expenses was to manufacture the stumpage into lumber and to sell it in the open market in competition with the products of other operators equally hard pressed.

The period following 1907, especially from 1908 to 1910, was marked by many failures in the lumber industry especially in the Northwest. By 1911 the lumber business had become more profitable. In 1912 there was a marked improvement in lumber demand and in lumber prices fostered by improved business conditions, an increase in building, increased railroad earnings and favorable crops.

Prices, 1913-1920

1913.—Although the trade at the opening of the year 1913 looked favorable, prices began to decline in April and competition among manufacturers was very keen. During the last four months of the year lumber prices were unsatisfactory, those for general building woods, such as Southern yellow pine, approached the price level prevailing in 1908 following the panic.

1914.—Values continued to fall during 1914 because of the subnormal building activities and the relatively meagre purchases made by the railroads. The opening of the European war in August soon reduced lumber exports to a minimum and brought about a hesitant attitude in buyers in this country, who limited their purchases to immediate needs only. In spite of curtailed production stocks of lumber accumulated at the mills throughout the year, since curtailment did not keep pace with the decreased demand. It was not until the middle of the following year that the stocks on hand began to diminish to an appreciable extent.

1915.—During the first three quarters of 1915, lumber prices remained at approximately the same level as those current during the latter part of 1914. Toward the close of the year the price level took an upward turn due to the large amount of industrial construction, the revival of railroad purchases of lumber on a rather large scale, purchases of retail yard, planing mill and wood-using factories made in anticipation of a heavy spring trade, and to a car shortage which created a lumber scarcity in some sections. Production was greatly stimulated by

this revival in demand, since operators were desirous of recovering their losses of the previous two years.

1916.—Stocks of lumber carried over into 1916 were not abnormal but there was a tendency on the part of buyers to withhold purchases in the hope of a return to the low quotations of 1915. This attitude on the part of the buyers led to price concessions, especially on general building woods, which was reflected in a price decline for many grades during the first two quarters of the year. This took place in spite of an acute car shortage which started during February and which later in the year proved to be one of the greatest transportation handicaps that the industry had experienced. Normally, a car shortage tends to raise prices by bringing about a relative scarcity of lumber in the large consuming regions. However, production so far exceeded the amount of lumber moved, that stocks rapidly accumulated and, in order to finance the operations, sales were made at a lower price than would ordinarily be justified. An increased demand for lumber and a continuance of the transportation handicap led to a rise in price late in the year.

1917.—In the second quarter of 1917 a marked advance came. This advance was due chiefly to the heavy demands of the United States government for military purposes, to the industrial activity in manufacturing centers due also to the war, and to the great prosperity which had come to the agricultural sections through the high prices which they received for their crops.

The chief feature of the market during the last nine months of the year were the government purchases

since the general building program of the country was subordinated to military requirements, and labor and money for speculative building could not be secured easily.

Prices during the last half of the year were held to a comparatively uniform advance by a voluntary price agreement entered into in June, between the Southern pine operators and the Council of National Defense, for such lumber as the United States government required for military cantonment purposes. This agreement did much to steady the price of general building woods, since Southern pine represents such a large per cent of the lumber output of the country. The importance of this wood in the military program during 1917 and 1918 is shown by the fact that 3,500,000,000 board feet of Southern pine lumber was absorbed for government purposes during a period of eighteen months.

The characteristic features of the 1917 lumber trade were the abnormal government demand, greatly reduced commercial business not related to the military program, transportation handicaps for the movement of commercial sales, and a voluntary price agreement between the producers and the various governmental purchasing agencies.

1918.—Commercial prices advanced rapidly during the early months of 1918 for such consignments as could be moved. This was due chiefly to a desire on the part of buyers to stock up previous to the 25 per cent advance in freight rates which was to go into effect on June 25, to the rapidly rising costs of production which pointed towards higher prices later in the year, and to the fear that with reduced production and increasing government

demands, the commercial buyers, in order to make certain even of their minimum requirements at a satisfactory price, must secure their stocks at an early date.

Governmental Price Fixing

The rapidly widening gap between governmental and commercial prices for lumber soon forced the conclusion that it would be impossible for the government to continue to purchase lumber in reasonable quantities unless some measures were adopted to put both governmental and commercial quotations on a parity.

The price fixing committee of the War Industries Board therefore fixed a maximum price at which certain kinds of lumber could be sold both to public and commercial agencies. The prices were first fixed for Southern yellow pine and Douglas fir in March, followed by Eastern spruce in April, and Pennsylvania hemlock in August. Special agreements were made also with regard to some other woods. No attempt was made to fix the price of hardwoods, although informal agreements were made with producers regarding certain items such as mahogany lumber and birch logs which were in demand for special military purposes. All of the price restrictions were removed by the end of the year.

Conservation measures were enforced in many wood-using industries, during the latter part of the year because of the necessity of diverting their labor, supplies and transportation to direct or indirect military purposes. These measures greatly curtailed the use of lumber for all but essential purposes. The result was a heavy decline in lumber production and a

consequent decrease in stocks on hand at the mills, since the movement of lumber was in excess of production.

During the last quarter of 1918 the lumber price index showed a decline of 3 points.² Southern yellow pine, however, rose 1 point and Eastern hemlock and Eastern spruce remained stationary.

This check in the rise of prices was due, in the case of hardwoods, to the abrupt cessation of lumber purchases by the government and to the inability of the commercial market to immediately absorb its normal amount of material. The industries using hardwoods, in many cases, specialized on war requirements and had large quantities of material on hand which had to be utilized before making new purchases. The uncertainty as to the trend of business during the next few months also caused a reduced demand.

The stock of general purpose lumber in the hands of dealers in this country was at a very low point, however, and the immediate requirements for lumber for repairs was sufficient to hold the market rather firm for construction woods. The Douglas fir decline may be attributed to the great uncertainty which existed in the minds of western operators as to the course future events would take. The movement of their product was hampered also by transportation conditions.

Prices in 1919

The first six months of 1919 was a period of more or less uncertainty in the lumber market. The lumber trade was unduly disturbed over what dis-

² Based upon the lumber price index in *Prices of Lumber*, by R. C. Bryant, War Industries Board Price Bulletin No. 43, Washington, 1919.

position was to be made of the several hundred million feet of lumber which the government had on hand at the signing of the armistice. Producers also were greatly concerned over the possible trend of business in this country and abroad. Many diverse opinions existed as to the volume of lumber that would be absorbed, the prices which it would bring and the probable trend of costs. Labor conditions in the industry were unsettled, a marked labor shortage existing, with constant pressure being applied for a wage increase.

Southern Yellow Pine.—In spite of these handicaps and the general business uncertainty of the country the index number of Southern yellow pine rose from 185 in the fourth quarter of 1918 to 200 during the first quarter of 1919. This increase was due to the very low stocks held at the mills, the small production of the mills and the relatively active demand for Southern yellow pine for general industrial purposes.

Most hardwoods suffered a decline during the first quarter of 1919 because wood-using industries had not yet returned to a normal basis and the export trade had not developed to any marked extent.

The start, about mid-year, of the building program to meet the housing shortage led to a brisk demand for general building lumber and prices for all items of stock began to advance very rapidly. This was reflected in prices of Southern yellow pine, whose index number during the second quarter was 216, during the third quarter 285, and during the fourth quarter 329, the total advance during the year being 144 points. The advance during

the year was greater than any which has occurred during a like period in the history of Southern pine and represents 21 per cent of the entire price advance made during the years 1913 to 1919 inclusive. Similar, but less pronounced advances also took place in other general building woods.

Eastern White Pine.—In 1919, the Eastern white pine index number was 163 during the first quarter, 167 during the second, 201 during the third, and 203 during the fourth. Of the total advance of 38 in the relative price of the above wood, 92 per cent came during the third quarter. Eastern white pine dropped 2 points from the last quarter of 1918 to the first quarter of 1919, a slight reduction occurring in all grades. This was due to the slackening of the box trade and other special uses for which white pine is used.

Eastern Spruce and Hemlock.—Eastern hemlock showed an advance of 85 points during the year. Eastern spruce dropped from 184 in the last quarter of 1918 to 173 during the first quarter of 1919, following which it rose to 204 during the third quarter, falling to 202 in the fourth quarter. Of the four softwoods considered in this study, spruce is the only one which showed a decline during the fourth quarter. This was due to the light demand for certain items, especially in "random" and "boards," which led to a drop in price in these items during October and November. The loss in value was largely regained during December. The chief reason for the decline in demand appears to have been that builders exhibited a tendency to hold back on building operations because of the increasing costs of



Fig. 1.—Weighted Index Numbers of Prices.—Southern Yellow Pine, Hemlock, Eastern White Pine, and Eastern Spruce. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914 = 100.)

labor and materials. Producers facing a dull market began to make price concessions to move stock. By December a new attitude towards building was assumed by contractors, who again entered the market. This action of the contractors combined with a shortage of lumber due to inadequate transportation, again caused a stiffening of prices. There was but little weakening of the market in "Frames" during the last quarter.

Hardwoods.—Hardwoods showed a marked increase during 1919. The price level of plain oak, hard maple, gum, birch, ash, and hickory, however, dropped during the first quarter of 1919 as compared to the last quarter of 1918, because of the uncertainty which existed in the wood-using industries regarding probable demand for their products during the year. By the second quarter the trend of business was more clearly foreseen and prices for all species began to rise.

A very rapid increase in values occurred during the last two quarters, because unfavorable operating conditions had kept production at a point below demand, stocks at mills were rapidly becoming depleted, and the demand for hardwoods by wood-using industries, which were again on a favorable operating basis, was becoming very strong. The prices offered by hardwood buyers were in excess of any previously paid for the same class of material. The most rapid advance in many hardwoods came during the last quarter of the year, when competitive buying by furniture, vehicle, automobile and similar industries raised prices to an unheard of level.

Gum.—Among those species the prices of which were studied, gum

showed the greatest relative advance during the year, the index number rising from 185 during the last quarter of 1918 to 355 during the last quarter of 1919. Of this advance of 170 points, 56.5 per cent took place during the third quarter of the year, in contrast to most other hardwoods, and 27 per cent during the last quarter. Gum, up to a few years ago, was regarded as one of our "cheap" woods, but the value of the lower grades for box material and the upper grades for furniture and other decorative purposes has raised its price level to a high point.

Ash.—The index number for ash advanced from 172 to 285 during the year, 58 per cent of this increase occurring during the last quarter, and 22 per cent during the third quarter. The chief factor in the advance in the price of this species has been the abnormal demand for this wood by the vehicle and other allied industries.

Birch.—Birch advanced from 158 to 221 from the fourth quarter of 1918 through the fourth quarter of 1919, but due to a decline in the first quarter of 1919, the actual increase for the last three quarters of 1919 was 82 points, 80 per cent of which occurred during the last quarter.

Poplar.—Yellow poplar was one of the two hardwoods included in this study which did not show a decline during the first quarter of the year. The maximum rise came during the last quarter of the year which represented 44 per cent of the 1919 price advance. The rise during the third quarter was 36.5 per cent of that for the year.

Chestnut.—Chestnut showed a slight advance during the early months of

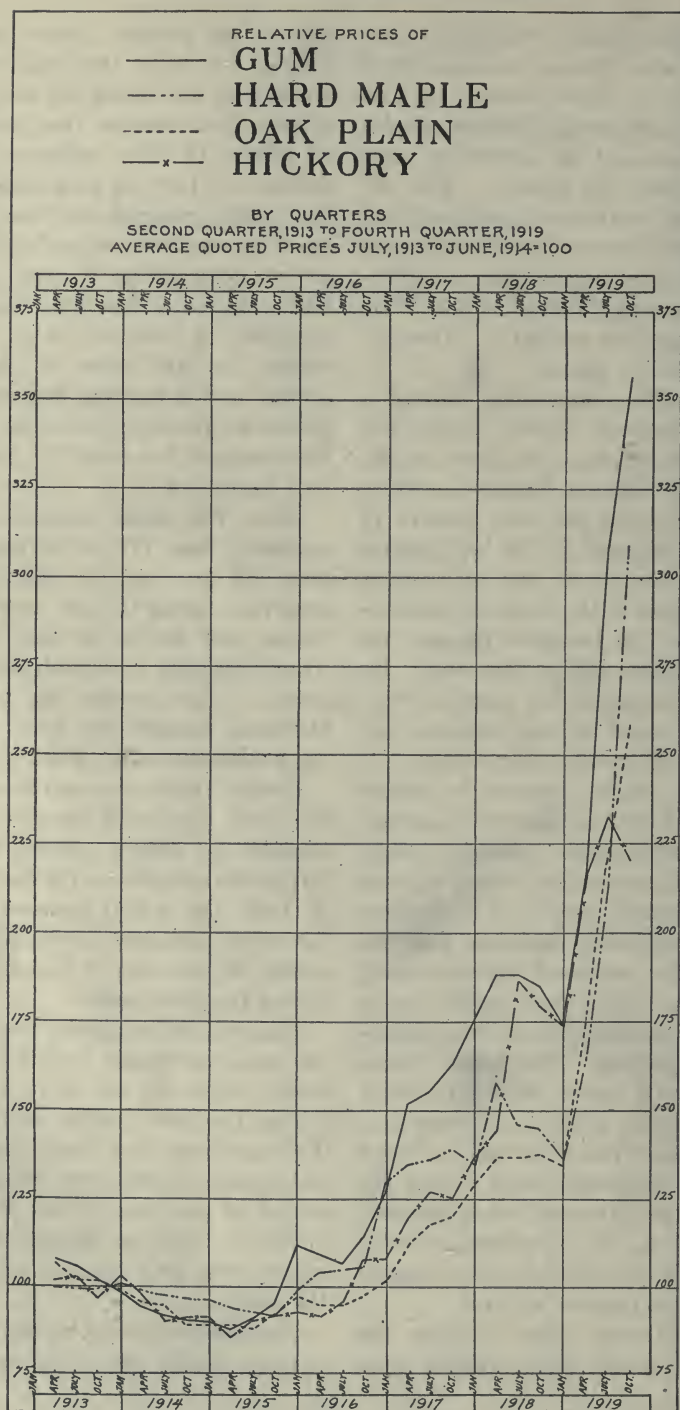


FIG. 2.—Weighted Index Numbers of Prices.—Gum, Hard Maple, Oak, Plain, and Hickory. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914 = 100.)

the year, but during the third quarter it rose 34 points above the second quarter, and during the fourth quarter 28 points above the preceding one.

Hickory.—Prices of hickory declined slightly during the first quarter but rose rapidly during the second and third quarters. In the latter period they were 30 per cent above the last quarter of 1918. The decline during the fourth quarter of 1919 may be attributed to the fact that only two grades of common lumber were available for study and that the demand for the low grades fell off during the latter part of the year. Had prices of the best grades been available the index number for hickory would not have showed this marked decline.

The maximum 1919 lumber price advances, as indicated by the data used, came in the third quarter for all species except yellow poplar and birch, which showed a higher increase during the fourth quarter. Among softwoods the only decline noted at the end of the year was in spruce, and among hardwoods, in hickory.

During the year 1919 the twelve woods forming the basis for this study showed the following per cents increase in relative price: Hard maple 114; gum 92; oak, plain, 87; Southern yellow pine 77; ash 65; hickory 60; yellow poplar 58; chestnut 53; Eastern hemlock 50; birch 40; Eastern white pine 23; and spruce 10. It is, therefore, evident that the maximum relative rise in price was in specialty hardwoods, while the rise in the price of softwoods came in general building woods, with the exception of spruce, which showed the lowest per cent rise during the year. This was due to the average base price of spruce being 60

per cent higher than that for Southern yellow pine and also to the fact that actual advances in the price of spruce were much less because the better grades of Southern yellow pine are adapted for more highly specialized uses in building construction than any of the grades of spruce.

The index numbers for the species mentioned for the years 1918 and 1919 inclusive are shown in Table I, and also graphically for the years 1913 to 1919, inclusive, by Figures 1, 2 and 3.

Lumber Prices Compared with "All Commodities"

The Bureau of Labor Statistics monthly index for "all commodities" and for "lumber and building materials" shows that from December, 1918, to January, 1920, the increase in relative prices was 20.4 per cent for the first group and 63.5 per cent for the second. In only one of the species of lumber mentioned, namely spruce, was the increase below that for the "all commodities" group. Five species showed a greater advance in relative price than the "lumber and building materials groups." Time has not permitted the calculation of the 1918 index number for the species discussed in this article so that the actual increase in the "lumber" group cannot be given. The 1919 index number for the twelve species, discussed in this article, shows an increase of 30 per cent over the 1918 index number for the same twelve species and for Douglas fir. Were it possible to include Douglas fir in the 1919 index, the per cent of increase would undoubtedly be somewhat higher. It is evident, however, that the "lumber" group values have risen at a rate

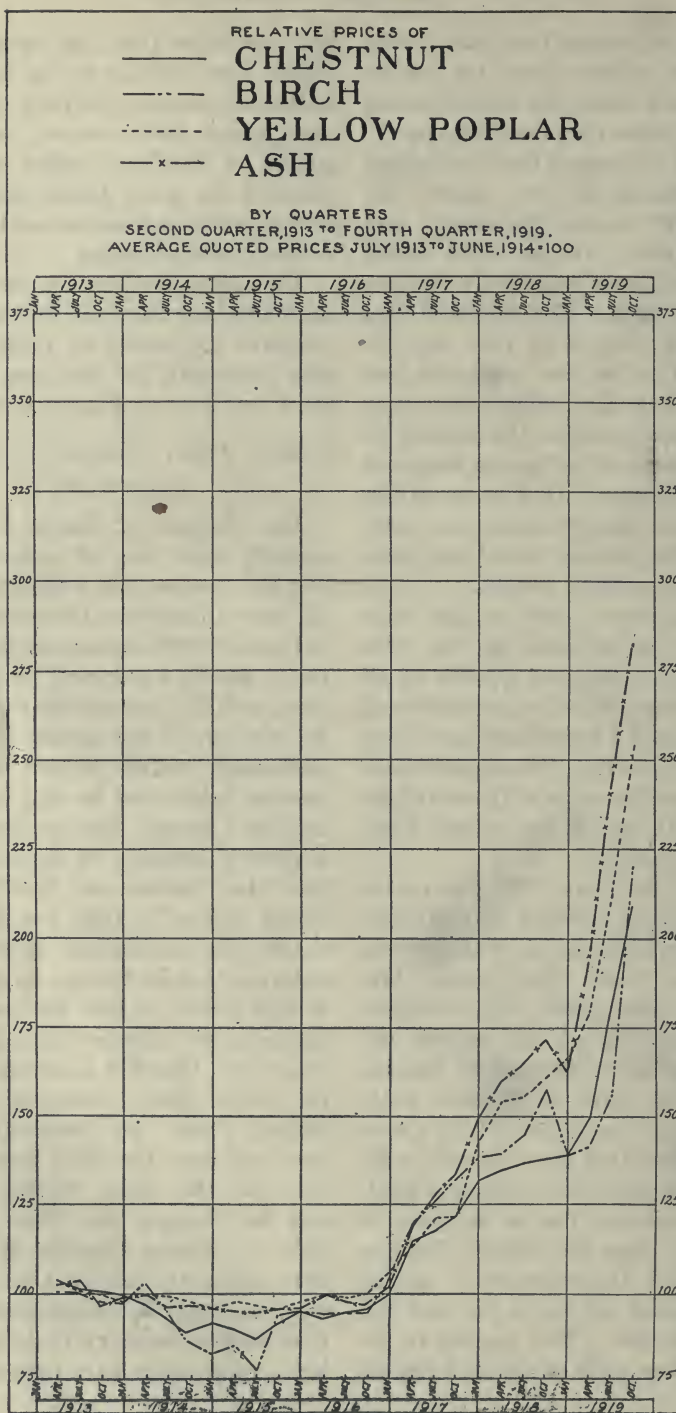


FIG. 3.—Weighted Index Numbers of Prices.—Chestnut, Birch, Yellow Poplar and Ash. By quarters, second quarter, 1913, to fourth quarter, 1919. (Average quoted prices, July, 1913, to June, 1914 = 100.)

at least 50 per cent higher than those for the "all commodity" group. It is not anticipated that this rate of increase will continue long, because further marked advances in lumber prices are doubtful. It is not a matter of surprise, however, that such a rise should have occurred, since for many years lumber was sold on a narrow margin of profit and did not share to the same degree in the advances made by some other groups. For example, the Bureau of Labor Statistics show that from January, 1913, to January, 1919, the "all commodity" group values rose 103 per cent, while that for lumber rose only 67 per cent, and for "lumber and other building materials" 61 per cent.

From the standpoint of national welfare the raising of the lumber price level to a plane more nearly equal to the "all commodities" group may be regarded with favor, since prices in former years have been too low to encourage timber land owners to engage in the production of timber for our future needs. With the present price level, it now becomes practicable to urge the growing of timber crops since the returns promise to be such as to insure a reasonable profit on the investment.

Dangers of Rapid Price Increases

That the rapid price increase during the last year carried with it an element of danger to lumber producers cannot

TABLE I.—INDEX NUMBERS OF LUMBER PRICES FOR THE YEARS AND QUARTERS, 1918-1919 *

	All species	Southern yellow pine	Eastern white pine	Eastern hemlock	Spruce	Oak, plain	Hard maple	Gum	Chestnut	Birch	Yellow poplar	Ash	Hickory
Year 1918.....		186	162	159	177	138	146	184	136	145	154	162	162
1919.....	223	258	182	205	190	196	200	263	170	165	203	215	211
Quarters 1918													
First.....		182	154	147	161	129	135	175	133	139	143	150	132
Second.....		194	163	156	180	137	158	188	135	140	154	160	144
Third.....		184	167	166	184	137	146	188	137	145	156	165	192
Fourth.....		185	165	166	184	138	145	185	138	158	161	172	179
Quarters 1919													
First.....	175	200	163	167	173	135	137	175	139	139	167	162	174
Second.....	193	216	167	178	176	170	161	213	149	142	179	194	215
Third.....	244	285	201	223	204	222	208	309	183	157	213	219	233
Fourth.....	282	329	203	251	202	258	310	355	211	221	254	285	282

* The Index numbers for the year 1918 are taken from *Prices of Lumber* by R. C. Bryant, War Industries Price Bulletin No. 43, Washington, 1919. It was not practicable to secure data on Douglas fir prices, which appear in the above mentioned bulletin; hence a series of index numbers for this species are not included. The prices of all species, except those for spruce, are taken from quarterly f. o. b. wholesale mill prices collected by the U. S. Forest Service, while those for spruce have been compiled from weekly quotations in the Boston wholesale market and published in the *Commercial Bulletin* of Boston. The quotations for Southern yellow pine are from mills in Alabama, Arkansas, Louisiana, Mississippi and Texas; Eastern white pine from mills in Michigan and Wisconsin; Eastern hemlock from mills in Michigan and Wisconsin; oak, plain, from mills in Arkansas, Kentucky, Louisiana, Mississippi, Tennessee, and West Virginia; gum from mills in Alabama, Arkansas, Louisiana, Mississippi, Missouri and Tennessee; chestnut from mills in Kentucky, North Carolina, Tennessee and West Virginia; yellow poplar from mills in Kentucky, North Carolina, Tennessee and West Virginia; hickory from mills in Tennessee; hard maple from mills in Michigan; ash from mills in Arkansas, Kentucky, Mississippi, Missouri, Tennessee and West Virginia; birch from mills in Wisconsin.

be doubted. Instability of prices leads to demoralization of the market, to a reduction in the volume of business and to the stimulation of the growing use of wood substitutes. With this in mind several sales organizations representing large lumber producers in the United States recently announced that their wholesale prices during the first six months of 1920 would be fixed at a point not exceeding the prices quoted on January 15, 1920. This, it is believed, will restore confidence in the buying public and will enable them to outline their buying policy on a definite maximum price.

The reasons for the phenomenal advance in prices in 1919 are not difficult to find, and may be attributed largely to depleted stocks at the mills, low production, serious transportation troubles and increased costs. Of these factors, the first three have been the most important, since the relative increase in price during the last few months has been greater than the increased cost of placing the product on the market.

STOCKS ON HAND, 1916-1919

The situation with reference to stocks on hand in the Southern pine region is shown in Fig. 4, which is based upon the lumber held by the average Southern pine mill for the years from 1916 to 1919 inclusive. From this it can be seen that, with minor exceptions, the stocks rapidly decreased from June, 1917, to September, 1919, since which time a slight accumulation has taken place, due chiefly to the inability of mills to move their product to market because of the lack of cars.

The continued demand for lumber

was such that on January 27, 1920, the secretary-manager of the Southern Pine Association reported that 146 mills had unfilled orders on hand for more than one-half of a billion board feet of lumber—about three and one-half million board feet per mill.

In the Douglas fir region the stocks at the mills steadily declined from January, 1919, when they were 83 per cent of normal, to August, when they were 56 per cent of normal. Since that time there has been a rapid accumulation of lumber, the December stock sheets showing the stocks to be 90 per cent of normal.³ This accumulation is due largely to a serious car shortage which has greatly reduced the volume of lumber which has moved eastward. The Douglas fir price level through the latter part of the year rose rapidly. One grade of Douglas fir (4/4 vertical grain car siding) reached \$100, the first time in the history of this species that such a high price has been obtained for any part of the general mill output.⁴

Stocks at hardwood mills showed a decline of 39 per cent from January 1, 1919, to November 1, 1919, the latest date for which records were available.⁵ There is every indication that the stocks at the end of the year were at a still lower level, with no immediate prospect of bringing them up to a point which would meet even the emergency requirements of the country.

A summary of the reports of eight regional lumber manufacturers associations which was compiled by the

³See Fig. 5.

⁴A Douglas fir price index is not included in Table I because of the lack of data.

⁵Based on a report of the American Hardwood Manufacturers' Association. See Fig. 6.

National Lumber Manufacturers Association, shows that during the year the reported cut was 10,417 millions of board feet, the shipments, 10,081 millions of board feet and the orders, 10,231 millions of board feet. The shipments were therefore 96.7 per cent and the orders 98.2 per cent of production. The industry as a whole, therefore has had but little opportunity to replenish the depleted stocks at the mill, and the country entered

the present year with a relatively low stock of lumber from which to draw. Since production for the last six months for the mills reporting to the National Association was approximately only 80 per cent of normal, the possibility of a price reduction for lumber is not encouraging.

This is especially true, since in many of the large consuming regions the available stocks of lumber at retail yards are at a minimum and badly

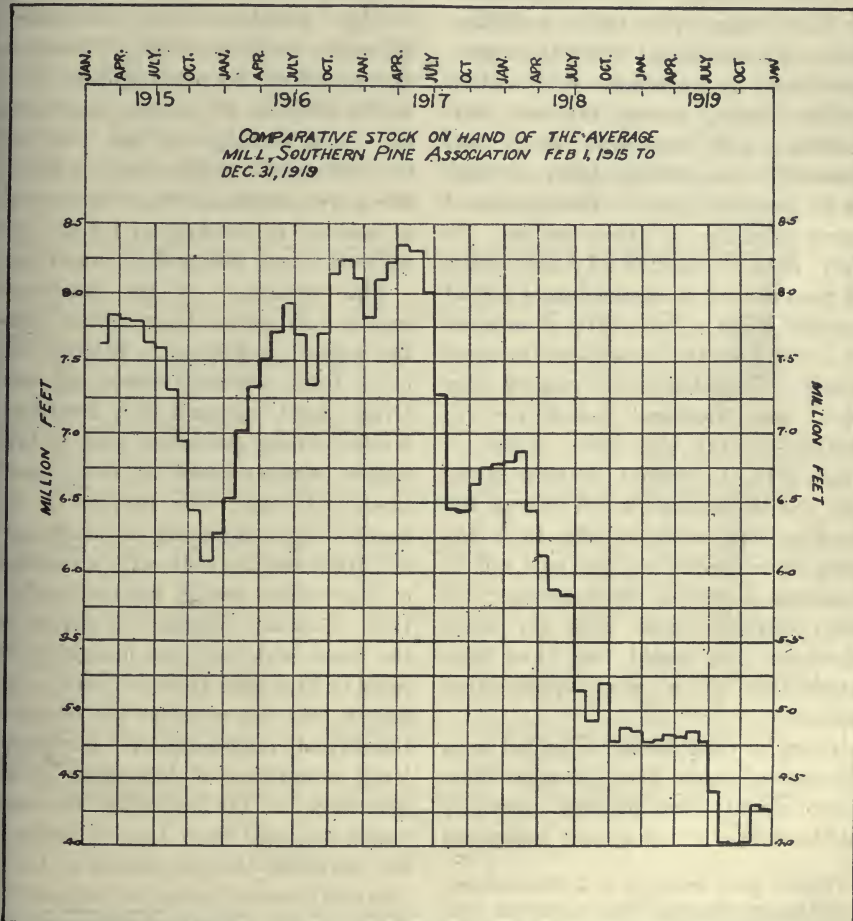


Fig. 4.—Stocks on hand at the average mill, as reported to the Southern Pine Association, February 1, 1915, to December 31, 1919.

broken, and if the prices hold to a reasonable level an unprecedented demand for lumber may be reported during the coming year.

Production in 1919

The reasons for low production in 1919 may be attributed chiefly to the scarcity and inefficiency of labor and the very unfavorable climatic conditions which prevailed during the latter part of the year.

Labor Shortage.—The labor situation in the Southern pine region well illustrates the conditions which the operators faced in practically every section of the country during the last year. Southern pine operators were confronted with an average labor shortage of 20 per cent due to the exodus of many workmen to urban centers. In July, 1914, it required 23.3 man hours to produce one thousand board feet of lumber, while in July, 1919, it required 37.5 man hours to accomplish the same result. The labor cost increased from \$6.01 per thousand board feet to \$13.50, or 125 per cent. Again in July, 1914, it required 134 men on the pay roll to maintain a full crew of 100 men per day, while in July, 1919, 153 men were carried on the pay roll to maintain a crew of the same size.⁶ If the producers met with no other obstacle, they could not have kept production at a level approaching normal.

Climatic Conditions.—Coupled with an unsatisfactory labor situation there were climatic conditions, especially in the South, which greatly hampered

logging operations during the latter part of the year. The logging conditions during the early part of 1919 were favorable, but during the fall and early winter, especially in October and November, the precipitation was several per cent above the average reported for many years, which so reduced the log input that a log shortage occurred which compelled many mills to run on a part-time schedule.

During the first eleven months of the year, 135 subscriber mills reporting to the Southern Pine Association showed a total loss of 80,213 hours, or approximately 60 working days each, 41,878 hours or 31 working days being due to a shortage of logs. On the basis of normal production, the loss of the above mentioned time represented a decrease in production for the 135 mills of nearly 600 million board feet.

The situation in the hardwood region was particularly trying since the winter production in 1918-19 was much below normal because the relatively light demand for hardwood lumber during the latter part of 1918 caused manufacturers to carry small stocks of logs. The revival of the hardwood trade during the early part of 1919 found the mills with a shortage of logs which greatly limited production. Summer logging was started on the usual scale but was hampered by rains in May and June so that the log output was not equal to the demand. Hardwood manufacturers purchased large quantities of logs from small operators and the serious car shortage which occurred from July to September curtailed the movement of these logs and thereby created an unexpected deficit in the supply of raw material at the mills.

⁶From a letter written by J. E. Rhodes, Secretary-Manager, Southern Pine Association, published in the *American Lumberman*, Chicago, February 28, 1920, p. 51.

As a consequence of the various combinations of circumstances, hardwood operators went into the winter of 1919-20 with the smallest log supply in recent years. This will mean a low lumber output, relatively speaking, since logging cannot reach normal before the late spring or early summer of 1920.

In the Northwest the chief factor which has influenced production has been the labor situation, while a car shortage has chiefly affected shipments. In this region production has not been hampered to the same extent as in the South, which is shown by the return of the mill stocks to approximately normal at the close of the year.

Since a large part of the lumber for the domestic trade moves from the

producer to the consumer by rail, the transportation situation has a marked influence on the price at which lumber is sold. In times when the demand for lumber is spirited, the failure of rail transportation to function normally may, and often does, create a marked scarcity of lumber in the larger markets of the country. This was the case during the past year.

From July to September Southern pine operators did not receive more than 60 per cent of their car requirements, and only about 75 per cent of their requirements during the last two months of the year. The west coast situation also was so unfavorable, that it was not possible to deliver lumber in the volume that the consumers demanded. The result has

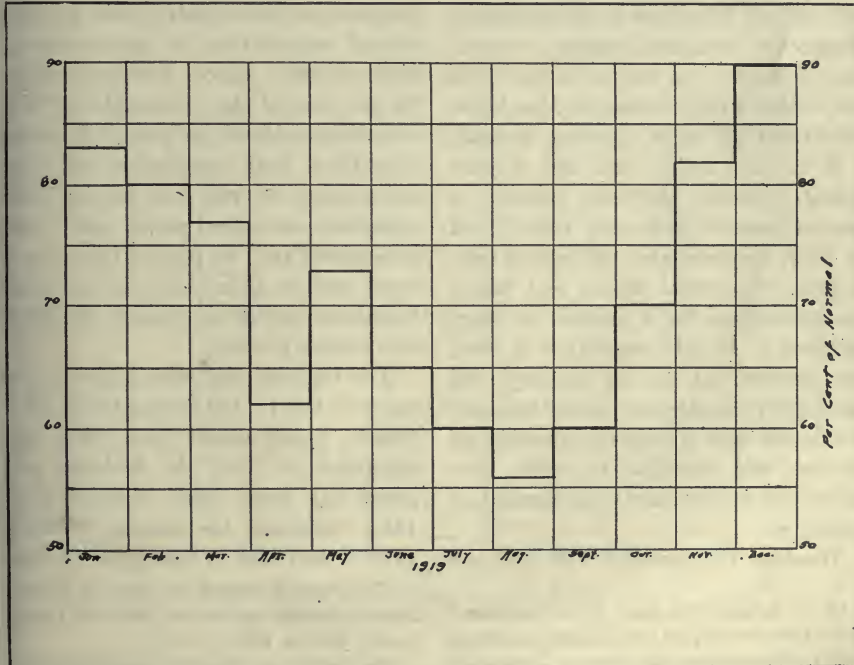


FIG. 5.—The per cent of normal stocks on hand at mills in the Northwest as reported to the West Coast Lumber Manufacturers' Association. January to December, 1919, inclusive.

been an uncontrolled market for such lumber as could be delivered.

Increasing costs of production have played only a minor part in the present price level, since the values at which lumber changes hands are determined chiefly by the competitive bidding of buyers to fill their most pressing needs.

THE FUTURE OF THE PRICE MOVEMENT

There are certain phases of the present lumber situation which furnish some basis for a reasonable prediction of the probable course which lumber prices will take during the course of the present year. Attention has been directed previously to the low stocks now held at the mills and to the sub-normal rate of production in the face of unprecedented demand. As far as we can now see there is no immediate prospect of a marked change in conditions affecting the output of the mills since there is little assurance that labor conditions will soon approach normal.

It is improbable that the lumber industry during 1920 can produce a greater amount of lumber than it did in 1918, approximately 33 billion feet, a quantity several billion feet below the production for a number of years previous.⁷ If this prediction is true, the lumber cut of the country will again prove inadequate to our immediate needs and a relative scarcity of lumber will continue to exist, provided our requirements are normal or nearly so.

Whether the demand will continue

as great as it has been during the last few months will depend, it is believed, on whether the prices of lumber can be held to a relatively stable basis. The demand for building materials will not continue unabated if prices tend to rise as they have during the last few months. The need for lumber is as great as ever but the high prices now prevailing already have had a tendency to limit speculative building operations to a minimum and any further advances will undoubtedly cause a cessation of all but the most urgent building needs.

Building Requirements for 1920.—The building requirements of the country were ably summarized by the Brookmire Economic Service a few weeks ago.⁸ In this statement it is pointed out that the average building program of the country calls for the annual expenditure of approximately \$700,000,000. Since January, 1919, 23 per cent of the contemplated construction has been for private building operations, both speculative and non-speculative; 15 per cent for the construction of apartments and like structures; and 62 per cent for structures such as theatres, churches, office buildings, factories, public buildings and similar projects.

The building statistics for some 105 cities in the United States for the last twelve years show that, with the exception of 1916, the building program has been below normal since 1913, touching the lowest point in 1918.⁹ In order to bring the building

⁷For a detailed statement of the lumber cut of the United States for each calendar year from 1913 to 1918 inclusive, see *Prices of Lumber*, by R. C. Bryant, War Industries Board Price Bulletin No. 43.

⁸The Building Outlook for 1920, by John C. Howell, *Southern Lumberman*, Nashville, December 20, 1919, p. 131.

⁹On January 1, 1919, the *American Architect* estimated that, due to decreased building operations, this country was short 700,000 dwellings.

program up to normal for this entire period the expenditures during 1920 must approximate \$2,500,000,000.

The restriction in building construction for housing purposes is well illustrated by conditions in three of the largest boroughs of Greater New York, namely, Manhattan, Brooklyn and the Bronx, which in 1916 spent \$76,000,000 for dwellings, an expenditure that did not even then fully meet the demand. During 1917 and 1918 the expenditure was approximately \$29,000,000 of which about \$10,000,000 was spent in 1918.

Although we have the immediate necessity for the greatest building program in the history of the country, it is exceedingly doubtful if sufficient capital can be secured to finance even

a reasonable proportion of it, since the present high price of building materials of all sorts and of labor will not in all cases permit the necessary returns on investments made in speculative building.

It is therefore probable, that during the coming year operations will be confined chiefly to necessary building operations. It is doubtful if even the normal program will be met, unless costs become more stable than they have been during the last few months. A great shortage of housing accommodations for our normal population, however, augurs well for a strong future demand for general building woods.

Prospective Demands.—What of other wood requirements? The furniture trade during 1919 reports that

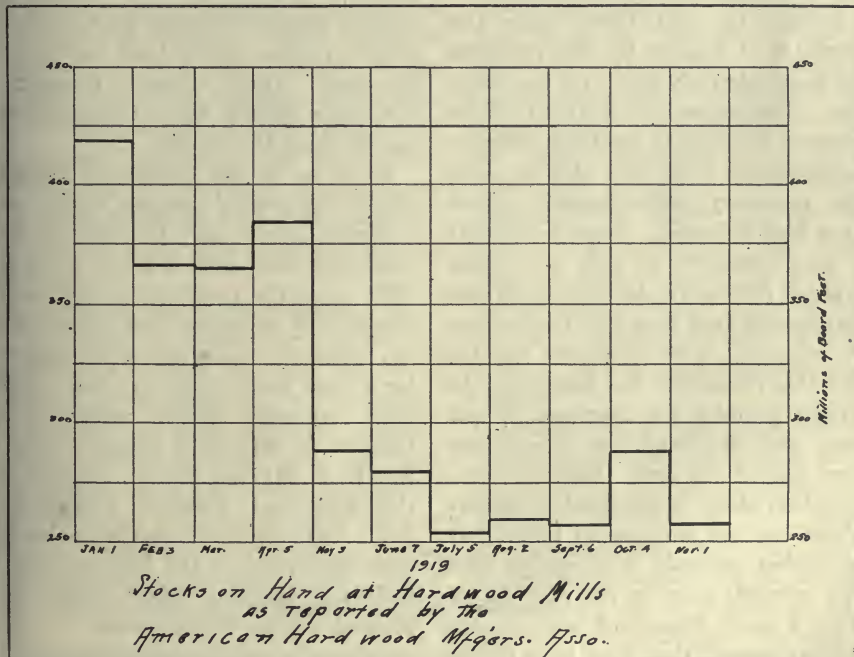


FIG. 6.—Stocks on hand at hardwood mills in the Southern and Eastern districts of the American Hardwood Manufacturers' Association, as reported to the above association. January 1, 1919, to November 1, 1919.

business exceeded expectations, the demand being for the better quality of stock. The industry now has on its books enough business to keep the plants running to capacity until early fall, with prospects of one of the most prosperous years in its history. There is therefore but a slight chance for a diminution in demand for raw material by the industry. Since the furniture trade normally consumes more than 900 million board feet of lumber annually, largely hardwoods, this means a sustained demand for this class of material.

The vehicle and agricultural trade which normally consumes more than one billion feet of lumber is also active and will probably demand a large proportion of its normal requirements both for softwoods and hardwoods.

During the last three years the purchase of lumber by the railroads has been relatively low, with the result that a vast amount of material will be required not only to meet the ordinary maintenance needs, but also to make the necessary improvements which have been deferred. There now exists a great scarcity of box and other types of cars, since the building of new cars has not kept pace with the increase in business. This is shown by the fact that during the last four years the freight business has increased 57 per cent, while the freight car increase has been only 5 per cent. Since car construction alone is reported to require about one and one-quarter billion feet of lumber annually, it is evident that the railroads must in the near future play a more important part in the lumber market than they have during the last few years.

We find in every branch of domestic

lumber consumption an indication of a large demand during the present year which points to an active market for the lumber output of the country.

Imports.—Previous to the war, we were importing, largely from Canada, approximately 1,200,000,000 board feet of lumber and logs (chiefly general purpose woods), 900,000,000 shingles and 565,000,000 laths. These imports, in so far as lumber was concerned, continued to come into this country during the entire war period and long have been recognized as one of our definite sources of supply.¹⁰ That any appreciable increase in our imports from Canada will take place in the future is not anticipated, since Canada faces industrial problems similar to our own, which hamper production. In addition, Great Britain is making greater demands on Canada's surplus lumber supply than she has in the past. There appears, therefore, but little chance for an augmented supply from this source.

In so far as the sources of foreign supply for general purpose woods are concerned, they may be regarded as negligible since such a trade was not built up in the past, and present and prospective economic conditions are not indicative of any such development for a great many years to come. The chief potential source, other than Canada, of imports of general purpose woods, is Mexico, which, because of the disturbed political conditions, holds forth no assurance of an early reestablishment of the lumber manufacturing projects which were destroyed during recent years.

¹⁰Our imports for 1919 of lumber and logs was 1,241,301,000 M. bd. ft.; shingles 1,987,480 M. pieces; laths 802,651 M. pieces.

The chief forest producing regions of Europe, namely, Russia, Finland, Sweden, Norway, Austria and Poland, are of interest to producers in this country chiefly because of the competition which they offer to American woods in European markets, although it is true that one consignment of Polish oak recently reached this country due to the very high price at which the native oak is now selling in our domestic markets. That an active trade of any volume in Polish woods will be built up in this country in the future, however, is not to be expected.

Exports.—In 1913 we were exporting about 3,750,000,000 feet of logs and lumber to foreign countries, about 8.4 per cent of our cut for that year. Of this amount 79 per cent was composed of softwoods. During that year, Europe received 37 per cent of our forest exports, North America (chiefly Canada and Mexico) 30 per cent; and South America 16 per cent. The foreign lumber trade fell off very markedly during the war and in 1918 was only 35 per cent of the export lumber trade of 1913. The heaviest decrease in the lumber trade was with Europe.

Our European trade in forest products since the close of the war has not shown a marked increase because of the unprecedented domestic demand and the high price level, the unfavorable money exchange and the high shipping rates which have prevailed.¹¹ That there is an opportunity again to enter the European markets, should the domestic demand slacken, is undoubted, although excessive compe-

tition would be met from lumber originating in Scandinavia and Finland. However, this competition can undoubtedly be met by producers in the United States because of the increase in the cost of production in the European countries mentioned, due to the great wage increase and also to the adoption of an eight-hour law in Scandinavia.

A recent estimate places the annual post-war lumber needs of Europe for housing facilities, new construction and for repairs made necessary by the damage done by military operations, at seven billion board feet in excess of normal pre-war requirements, an amount twice as great as our maximum peace time exports.

While there is little chance of Europe being able to purchase such a large additional quantity of building material, there are indications that her purchases in the near future will exceed those made in pre-war years. In supplying these additional needs, the lumber producers in this country have open to them a larger field of export trade in Europe than they have ever had presented to them before, because only Russia, Finland and Sweden can largely increase their pre-war exports of wood products without greatly depleting their forest capital.

Russia, during 1920, as a source of forest products is regarded by English buyers as an almost negligible factor; Finland, because of her internal troubles and unfavorable rate of money exchange, is considered an uncertain element, in so far as lumber supply is concerned; while both Swedish and Norwegian lumber exports during 1919 were below normal, with but little

¹¹During 1919 our exports of logs and lumber reached 1,247,801 M. bd. ft., about one-third of the 1913 exports.

promise of moving more than normal exports during 1920. In fact, Swedish reports state that the log input during the winter of 1919-20 will be below normal, although this has not been corroborated.

To sum up the situation as regards lumber prices. Indications point to the maintenance of a high relative price level in the future. So far the increase in the wholesale price of lumber has not been reflected to a marked degree in the appreciation of the value of the raw material, stumpage, because of the lack of labor to operate present mills to capacity. There is also the difficulty of securing machinery and supplies to equip new competitive manufacturing plants. It has been the history of the industry that only during comparatively short periods, however, does lumber manufacture yield a large profit, since it attracts new capital into the industry which creates additional competition for raw material, thus raising the price of the latter, and reducing the profits that are available to the manufacturer. Additional competition also tends to lower the price level because

of the keenly competitive character of lumber marketing. While the price level will undoubtedly fall during the course of the next year, it is doubted whether the industry will again ever face a period of low profits such as have overtaken it in the past. The supply of hardwoods is being rapidly depleted, while the end of the Southern pineries, as a vast producing center, is now in sight. Even today about 50 per cent of the output of the South is consumed locally, and this will rapidly increase with a decline in production.

Our lumber values are now approaching those of European countries and it is confidently expected that in the future we must pay a higher price than we have been accustomed to accept up to two years ago, unless we adopt adequate measures to meet the situation.

The sole remedy for averting a period of abnormally high prices for forest products, especially lumber, a few decades hence, has as its foundation stone the maintenance of a sustained yield in our forests, in other words, the practice of forestry.

Minerals as Essential Raw Materials

By GEORGE OTIS SMITH

Director, United States Geological Survey

AMERICAN industry must now meet world-wide competition not only in marketing its product, but in procuring its raw material. To the manufacturer, the problem of getting raw material is one of both supply and cost; he must study sources of raw material with a regard for adequacy and permanence as well as for price. He must plan for the future if his large plant is to continue to serve its complex constituency.

Though we have come to appreciate the size of our mineral industry and to recognize its essential relation to other industries, this idea is by no means new; Washington and Jefferson foresaw the raw-material problem and looked westward for new sources of minerals with which to strengthen the growth of the young nation. It happens, too, that the last public utterance of Lincoln was a message given to Schuyler Colfax on the morning of April 14, 1865, to carry to the miners of the west. "I have very large ideas of the mineral wealth of our nation—its development has scarcely commenced. Tell the miners for me that I shall promote their interests to the utmost, because their prosperity is the prosperity of the nation and we shall know in a very few years that we are indeed the treasury of the world."

AMERICA'S INDUSTRIAL DEPENDENCE UPON MINERAL RAW MATERIALS

To us, these words of the War-President sound prophetic, and indeed

it required another great war to force home to America a full understanding of its industrial dependence upon mineral raw materials. The U-boat threat taught us that certain minerals, even the names of which were unfamiliar to most citizens, were in fact "key" commodities without which basic industries could not operate. Domestic independence in these minerals was the necessity that gave birth to substitutes or called into being new sources of supply.

With the gradual approach of normal conditions of world commerce, however, there has been that return to old ways of thinking that might be expected. There must be some economic limit to this possible self-sufficiency even in a country so wealthy in raw materials as our own. With the question of adequate supply, which was uppermost during the war, is now joined the question of satisfactory price, which regains its old-time prominence with the return of competitive conditions; yet the pendulum of economic thought cannot swing back to its former extreme. The truths learned during the war exercise a drag that ought to keep our thinking somewhat nearer the normal.

QUANTITY VERSUS COST OF MINERAL RAW MATERIALS

The first lesson learned in the experience of meeting the insistent demands of a war program, with its rapidly expanding industries, was to think in terms of quantity of commod-

ity rather than its cost. So while we can no longer afford to pay any price for immediate delivery we realize better that quantity is the truer measure of usefulness and that the totals stated in dollars may not express the advances in industrial growth they seem to show. We have lost some of our old-time faith in the dollar as a standard measure.

Connected with this emphasis upon tons rather than dollars in considering the mineral raw materials is the necessity of thinking in terms of low costs rather than in terms of high prices. The day of excess profits that came through over-high prices ought soon to pass and the day of lower levels of both cost and price ought soon to dawn. The producer of raw materials, whether farmer or miner, surely deserves his share, but in discussing profits to owner or wages to worker the truth should never be overlooked that the market price of the mineral fuel or of the ore is but the starting point of some other industry, and only disaster can result from keeping a price too high. The rôle of the mineral industry is not to exploit markets but to supply consumers.

Industrial expansion on the scale imposed upon our country as its part in the war also cleared our judgment as to value in terms of utility. Gold was not one of the "war minerals," the increased output of which then engaged the best efforts of geologist, metallurgist and mine worker. Gold may have had its place in the war chests of militaristic nations and continues to hold its place as the universal measure of value, but gold is not a raw material whose general utility is at all on the scale of its more

democratic fellows, like iron or copper. Indeed, there is some reason to liken this noble metal, gold, which has so long held the allegiance of mankind, to the idle aristocracy of Europe and to suggest that the more abundant the world's supply of gold, the poorer off we are in the humble but useful things of life. It is a nation's output of coal and iron, petroleum and copper, sulphur and lead, cement and zinc, brick and aluminum, that gives it power, rather than its output of gold and diamonds. The war-time effort to rescue platinum from its associations with luxury and idleness and draft it into the service of war industries was a tardy recognition by the public that this precious metal is also highly useful.

UNITED STATES MINERAL SUPPLY

The dominance of the United States in so many of the essential minerals is proof that nature has placed us in the favored nation class. A simple comparison of the statistics of production and consumption in different countries is enough to prove that America is in the highest degree self-sufficient.¹ In the five important mineral raw materials, coal, iron, copper, lead and zinc, for example, the United States in 1913 showed an aggregate exportable surplus of 24 per cent, whereas Germany's deficiencies in these same essential minerals totaled 40 per cent.

LIMITATIONS TO DOMESTIC INDEPENDENCE IN MINERALS

Yet our industrial leaders cannot disregard the international viewpoint.

¹ Miss Eleanor F. Bliss has presented these facts and discussed their significance in the international readjustment of mineral supplies. *Economic Geology*, Vol. XIV, pp. 147-171, 1919.

Abundance carries responsibility, and domestic independence may be shorter-lived than we suspect. Less than a year and a half ago Professor Leith, in defining the position of the United States in regard to the international control of minerals, classified petroleum with copper as a mineral of which our exportable surplus dominates the world situation.² He regarded his own statement as necessarily somewhat tentative, but having agreed with him at that time I feel free to call attention to the strong proof now put forward by Mr. White that the United States is already dependent upon oil imports.³ Looking forward in copper may soon become an equally evident duty.

Another reason for opening our eyes to the world view of minerals is the connection between industry and commerce. No nation, however self-sufficient, can live profitably unto itself. Even with our wealth of raw materials, there are some minerals that we can buy cheaper than we can produce them and to import the cheaper material may be good business. Of course the immediate advantage of a low price may be outweighed by the ultimate advantage of domestic independence.⁴ But in addition to this consideration there is that of international trade, for in commerce trade balances

² Leith, C. K., *Mineral Resources of the United States*, 1917, Part I, pp. 7a-16a, United States Geological Survey, 1918.

³ White, David, *The Petroleum Resources of the World*. Seq. pp. 111-134.

⁴ The weighing of the emergency and other factors is discussed by the author in a short paper—"Economic Limits to Domestic Independence in Minerals"—*Mineral Resources of the United States*, 1917, Part I, pp. 1a-6a, United States Geological Survey, 1918.

as well as economical freight carrying require return cargoes. To win foreign markets for our manufactured goods, our ships must bring to us the food products or the mineral raw materials from the Orient and South America.

The hunt for petroleum to meet our future needs has fortunately begun and should be prosecuted with increasing vigor. Whether oil fields thus opened upon other continents with American capital shall eventually supply crude oil to our home refineries or furnish fuel oil to American bunker stations too far distant to be economically served from our home ports, the supplies needed to develop and operate the foreign fields will come from the United States. An "International Oil" operating in South America means a market for the product of a "National Tube" operating in Pennsylvania. Such investment of American capital in the development of foreign sources will not only yield the raw material needed and afford proper returns on the investment but will create markets for American products. In these respects, it is even better than investment in foreign government bonds. Fortunately, too, transplanting the American type of mining industry in far-off, undeveloped regions is sure to raise the native standards of living, and whether or not we care to count the profits of enlightenment, each step upward calls for kerosene and sewing machines and typewriters. Fair exchange of products is good internationalism.

The future security of the industrial program must be safeguarded, then, by insuring adequacy of supply of all the essential raw materials. In the pioneer stage of our rich country,

mineral fuels and ores have been cheap—perhaps too cheap—but within the last few years, the American manufacturer has seen these double and treble in cost to him, and the limit has not yet been reached. The inventiveness of American engineering and the high productiveness of American skilled labor together justify the hope of

lowering manufacturing costs without reducing wages, but wise provision for an adequate supply of mineral raw materials also demands attention, even in this favored land, where the bounty of nature has bred that type of optimism that thinks too little of the morrow:

Copper

By B. S. BUTLER

United States Geological Survey

THE copper industry is, and has long been, distinctly a world industry rather than a local or national one. Copper is produced in but comparatively few regions from which the supply is distributed to the peoples who are large users of the metal. Several of the highly industrial states are almost entirely dependent on outside sources, as Great Britain, France, Belgium and Holland, while others, like Germany, can supply but a portion of their needs. Other countries, like Chile and Peru, Mexico and the Belgian Congo, produce large amounts of copper and use but little, while others, like the United States and Canada, both consume and export large amounts. Figure 2 shows the relative production and consumption of the principal countries before the war.

United States.—Before the war the exports of copper from the United States exceeded 50 per cent of the total production and it is apparent that the industry in this country must meet the competition of a world market.

It is also apparent that, at present, North and South America are the greatest sources of supply, while the manufacture of copper is carried on largely in the United States and Europe.

GROWING DEMAND FOR COPPER

The industry became important in the United States about 1845 with the development of the Lake Superior copper district. The rapid advancement

in production has been in response to the greatly increased need for machinery and electrical transmission—the two great uses of the metal. For these two uses no substitute has yet been found that is equal to copper in all respects. That there is bound to be a great expansion in both these uses seems obvious. The production of hydroelectric power is increasing throughout the world and the burning of coal at the mine and transmission of power is likely to make steady progress. It is perhaps not too much of a dream to picture, at no very distant date, an interlocking power system that shall cover the eastern part of our country, for example, utilizing the available water power and supplementing this power by coal. This system will furnish power for traction, manufacturing, light and heat. As oil begins to fail, as the geologists tell us it soon will, the motorist of the future may stop at the service station for “juice” instead of “gas.” If development lies in the direction suggested, within the next score of years we may see quite as intensive a campaign to develop copper mines as we are now witnessing in the search for oil. In fact, the large exploration companies already foresee a great future demand and are acquiring territory that has promise of yielding copper wherever it is to be found.

War Demand for Copper

In the past the output of copper has been controlled by the demand. For



Fig. 1.—Map showing location of principal copper producing centers of the world. Size of circle indicates relative size of output. From Mineral Resources of the U. S. 1917. U. S. Geological Survey.

several years before the war the capacity of copper mines was in excess of the demand for copper and the increase in the capacity of metallurgical plants had been guided by the probable need for the metal. Thus, until they were hampered by shortage of labor the mines were easily able to meet the unusual demands caused by the war. But it required some time to bring the metallurgical plants up to the same capacity. The increased need for copper for war purposes was proportionately greater than for most of the

major metals, thus, as compared with iron, it shows the following ratio: For the period of 1880 to 1885 there was produced in the world one ton of copper to 104 tons of iron; for the period 1911 to 1915 the ratio was 1 to 70; in 1913 the ratio was 1 to 79; in 1914, 1 to 66; in 1915, 1 to 61; in 1916, 1 to 53; in 1917, 1 to 52; and in 1918, 1 to 54. This war demand has tended to develop an excess of copper-producing capacity over that required for peace times, a condition which is emphasized by the fact that a much

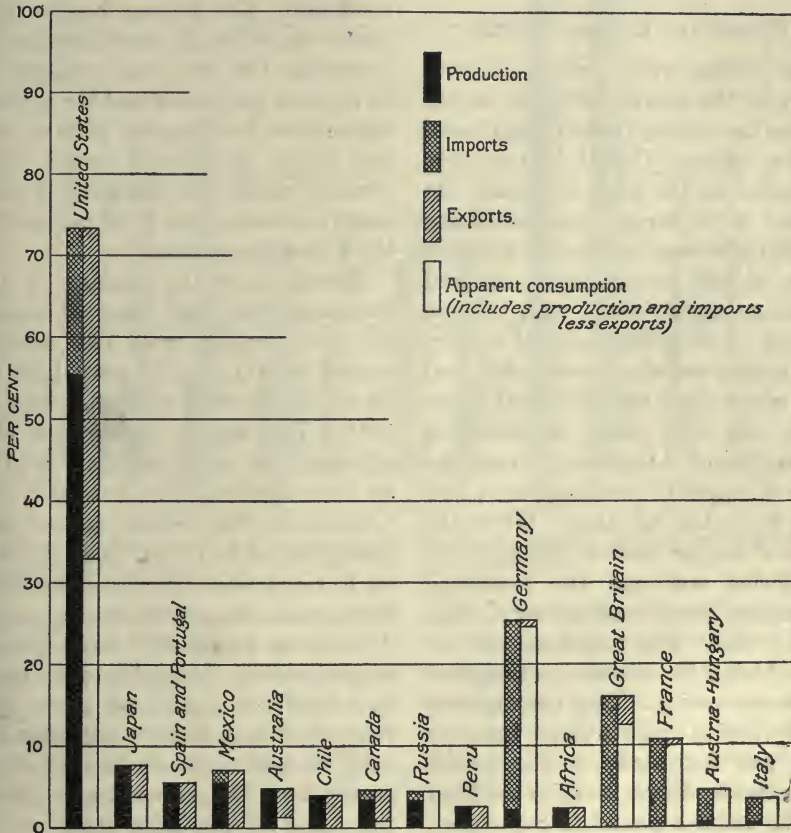


FIG. 2—Relative production, consumption, imports, and exports of copper by the principal copper producing and consuming countries in 1913. From Mineral Resources of U. S. 1917, U. S. Geological Survey.

larger proportion of copper than of iron that has entered into war uses can be converted into peace-time uses. Furthermore, so far as the United States is concerned the slow recovery of European countries from war conditions and the severe drop in the rate of exchange has hampered export business. There was, however, a steady increase in the amount of copper used for peace-time industry as compared with iron before the war and the temporary unbalancing of the ratio by the war will doubtless soon disappear.

WAGES AND COPPER PRICES

For several years before the war, wages in the copper industry, and in fact in the mining industry in general in the western United States, were controlled by the price of copper. In several of the large copper-producing camps there were agreements whereby wages should automatically rise and fall in an agreed ratio, with the rise and fall of the selling price of copper. This system was also generally followed even where there was no formal agreement, and other classes of mining in the west found it necessary to meet the wage of copper miners in order to hold their best class of labor. When the price of copper rose to unusual levels during war and the producing companies were making very large profits, there was a demand on the part of labor for a larger participation in the prosperity. This demand was met by giving bonuses above the price that was indicated by the earlier agreements. When the price was fixed at 23.5 cents a pound in September, 1917, by agreement between the producers and the government, it was stipulated that wages should not be

reduced and from that time there has been no close relation between the price of copper and wages in the sense of the pre-war agreements. After the close of the war, when the price of copper fell, it was found that the high cost of living made it impractical to return to the pre-war schedule, and in places where wages were greatly reduced it was found necessary to again raise them in order to hold a desirable class of labor.

Before the war the copper mining industry had been in a prosperous condition. The average cost of producing copper for the years immediately preceding the war was probably 9 to 10 cents per pound and the average selling price for the years 1909 to 1913 was about 14 cents a pound. The average profit was therefore 4 to 5 cents a pound, or 40 to 50 per cent of the cost of production.

Shortly after the opening of the European war, the price of copper advanced rapidly from 13.3 cents a pound in 1914, to 17.5 cents in 1915, 24.6 cents in 1916, and 27.3 cents in 1917. The cost of production also advanced, but not as rapidly. In 1918, as determined by the Federal Trade Commission, the average cost of producing copper for 85 companies, including foreign production of over 400,000,000 pounds, was 16.167 cents a pound. The average cost in 1917 was doubtless somewhat less. It would appear, then, that in 1917 the profit per pound had risen to 12 and 13 cents and that the ratio of cost to profit did not differ greatly from the pre-war ratio. After the fixing of the price there was a decrease in the profits and in the ratio of costs to profits and a further decrease following the close of the war when the

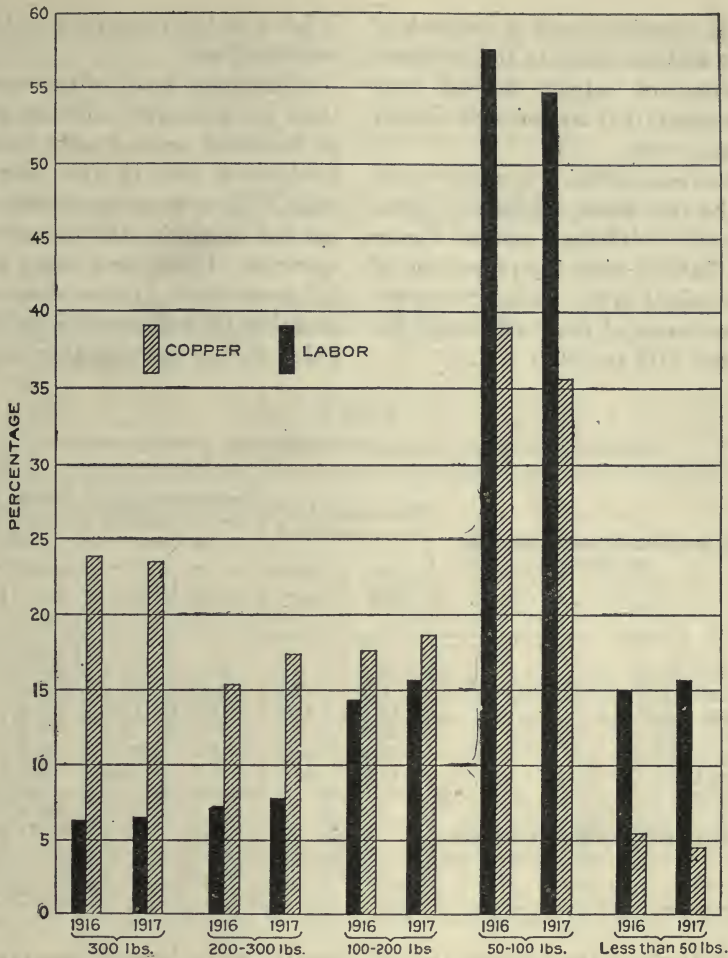


FIG. 3—Labor employed and copper produced in different classes of copper mines, 1916 and 1917. From Mineral Resources of the U. S. 1917, U. S. Geological Survey.

selling price fell. There was a decrease in costs due to increased efficiency of labor and the closing of mines where the costs were high, but there was undoubtedly a great decrease in profits, a condition which has continued to the present.

EFFICIENCY IN COPPER MINING

The increase in the amount of copper that has resulted from a day's

labor is a notable and gratifying feature of the copper industry. Thus, in the five-year period from 1912 to 1916 the average amount of copper mined per man per day increased from 75 to 100 pounds. This does not include labor for transportation and metallurgical treatment. An increase of 20 per cent in days worked per year produced an increase of 62 per cent in copper mined. This increase is due largely to improve-

ment in machinery and in methods of mining and especially to the increased proportion of copper derived from large deposits that are operated cheaply on a large scale.

In this connection, it is of interest to note the very great difference of labor efficiency in different mines. Figure 3 and Table I show the proportion of copper mined in the United States at different rates of labor efficiency, for the years 1916 and 1917.

of labor in the years 1916 and 1917, is worthy of note.

In the early years of the war, when there was no marked shortage of labor, an increased price greatly stimulated production, but in the later years when there was an acute labor shortage the high price that permitted the operation of inefficient mines and left the more efficient mines short of men doubtless tended to reduce production, which did not increase after our entry

TABLE I

Classification of copper mines according to efficiency of labor in mining

Mine production (pounds per man per day)	Percentage of total labor employed		Percentage of total copper produced by mines		Average production per man per day	
	1916	1917	1916	1917	1916	1917
Above 300.....	6.2	6.4	22.5	22.5	<i>Pounds</i> 416.1	<i>Pounds</i> 371.8
200 to 300.....	7.2	7.7	14.2	16.5	230.0	227.9
100 to 200.....	14.2	15.6	16.2	17.7	133.3	120.5
75 to 100.....	39.0	6.5	26.6	5.5	78.9	90.5
50 to 75.....	18.4	48.2	9.5	30.1	59.6	65.1
Less than 50.....	15.0	15.5	5.0	4.4	38.5	30.1
By-product and labor efficiency unknown.	.....	.....	94.0	96.7	108.9	102.2
	.....	.....	6.0	3.3	.....	.....
	.....	.....	100.0	100.0	.....	.....

Table II shows the copper output of the country classified by the size of output of the mines.

The most striking feature of this table is the large increase in the number of small mines from 1913 to 1916 and 1917 without a correspondingly large increase in the copper produced. On the other hand, the large mines showed but a moderate increase in number, but from 1913 to 1916 a very large increase in the production of copper. The effect of the high price of copper, combined with the shortage

into the war. It would seem that in a crisis like the war, we cannot rely explicitly on an increase in price of a commodity to bring an increased production; and that in a commodity like copper, where there was but a limited supply of labor that could be fairly assigned to that industry, it is the part of wisdom to employ it in the most efficient mines, rather than to encourage prospecting and inefficient mining by making the price so high that such operations can be carried on profitably.

TABLE II

Copper output of the United States 1913, 1916, and 1917, classified by mines in which copper was the most important constituent and by those in which it was a by-product, and the production of the copper mines classified according to their contribution to the total output.

Year	Production from copper mines producing—							
	Less than 1,000,000 pounds		1,000,000 and less than 5,000,000 pounds		5,000,000 and less than 10,000,000 pounds		10,000,000 pounds or more	
	Number of mines	Quantity (pounds)	Number of mines	Quantity (pounds)	Number of mines	Quantity (pounds)	Number of mines	Quantity (pounds)
1913.....	492	22,960,797	36	93,088,952	11	78,178,256	24	1,004,634,383
1916.....	914	50,497,875	55	131,708,061	12	92,125,118	30	1,703,393,730
1917.....	1,006	50,641,988	58	130,596,600	16	106,458,988	32	1,579,590,348

Year	Total		Copper by-product		Grand total		Average price of copper (cents per pounds)
	Number of mines	Quantity (pounds)	Number of mines	Quantity (pounds)	Number of mines	Quantity (pounds)	
1913.....	563	1,198,862,388	883	36,707,339	1,446	1,235,569,727	15.5
1916.....	1,011	1,977,724,784	837	28,150,528	1,848	2,005,875,312	24.6
1917.....	1,112	1,867,287,924	813	28,146,425	1,925	1,895,434,349	27.3

Whether or not the price fixed in 1917 met the ideal of employing all available labor without encouraging its inefficient use, may be open to question. It certainly tended to dis-

courage operation of very inefficient mines. On the other hand, it was criticized for not allowing the same proportionate rise in price to copper that was being received by other commodi-

TABLE III

Year	General index number	Price per pound of copper calculated from general index	Average actual price per pound received for copper
1910.....	99	13.95	12.7
1911.....	97	13.67	12.5
1912.....	101	14.24	16.5
1913.....	102	14.38	15.5
1914.....	101	14.24	13.3
1915.....	102	14.38	17.5
1916.....	125	17.63	24.6
1917.....	178	25.10	27.3

ties. The amount of this difference is indicated in Table III. The general index prepared by the United States Department of Labor is presented and compared with copper. The base is the average of the five-year period 1910 to 1914.

It is apparent that during the period

1915 to 1917 the price of copper was high relative to the general advance in commodities. It is also apparent that the price agreed upon between the copper producers and the government was considerably below the figure that is indicated by the general advance in commodities.

The Petroleum Resources of the World*

By DAVID WHITE

United States Geological Survey

INTRODUCTION

PETROLEUM in the United States is a wasting asset so far depleted as no longer to afford a secure foundation for the obligations based upon its assumed continued adequacy. Barring unexpected good fortune in the search for new supplies, or even less unexpected curtailment of consumption, the petroleum production of the United States is likely not only never again wholly to meet our requirements but even to start soon on the long decline of a waning output.

For the first time in her history the United States is witnessing the day when one of her greatest stores of mineral wealth—her most dazzling and spectacular endowment, on which her prosperity, industries, and standards of living are so largely dependent, and which imparts a characteristic and essential quality to her civilization—is approaching exhaustion and so is no longer able to meet her growing necessities. After sixty years of prodigal generosity and profligate waste she discovers that her oil heritage is far spent and that henceforth she must become more and more dependent on the stores of other countries. The purpose of this article is to review our domestic supplies and to consider their life and the extent to which they may supply our prospective needs; to present a rough attempt at an appraisal of the oil resources of other regions of the

world based on our present most insufficient and fragmentary knowledge, and to call attention to the necessity for assuring the protection of this country by securing, even under increasingly unfavorable competitive conditions, sufficient oil reserves abroad to provide for our needs as long as oil is available to meet the requirements of other nations.

OIL FIELDS OF THE UNITED STATES

Oil Remaining Available in the Ground

The quantity of oil remaining available in the ground in the United States in January, 1919, was conservatively estimated by the oil and gas geologists of the United States Geological Survey at 6,740,000,000 barrels.¹ By "available" is meant recoverable by present methods of production. About one-half of these reserves are heavy oils.

A word should be offered as to the basis of this estimate, its mode of preparation, and its probable range of error. It is based on the results of the personal examinations of many of the producing and possible oil regions of the United States by the different geologists; on reviews of the production histories of the discovered or developed fields in this and other countries; on the geological conditions of occurrence of oil fields in all parts of the world and comparison

¹ White, David, "Unmined Supply of Petroleum in the United States," *Jour. Society of Automotive Engrs.*, Vol. 12, No. 5, 1919, pp. 361-363. Estimates for the various regions are given on p. 362.

* Published by permission of the Director of the United States Geological Survey.

of these oil fields with geologically similar but untested regions in United States; on the study of the structure, composition, alteration, sequence, and relations of the geologic formations, and on the critical review of surface indications, well records, sections, well production curves, sand characters, water relations, etc. It represents, for the most part, the weighted best, but deliberately conservative judgments of these geologists in conferential consideration of all the data then available. It does not differ greatly from the results of two previous estimates made by geologists of the Survey, and it is probably the best founded and most reliable estimate yet formulated. Nevertheless, it is of necessity highly speculative, for, as every geologist knows, an estimate of a commodity so intangible and fickle as oil in the ground, especially in undeveloped and untested regions, is, at best, one in which many of the elements are merely scientifically calculated guesses in the formulation of which all lines of evidence are taken into account and weighed with the experience and judgment acquired in other regions. However, conceding that for many areas in the country the information is very fragmentary and inadequate, that there are many factors controlling the distribution of petroleum that are not yet understood by geologists, and that consequently such an estimate must necessarily be wildly speculative and subject to great latitude of error, it may nevertheless be argued that the progress of geologic examinations of the country and of exploration by the drill has gone so far, the principal factors of oil control are sufficiently proven, and the results of development are now so voluminous

that it is highly improbable that the error is more than 50 per cent. An error of 75 per cent seems so improbable as not to justify serious consideration at present.

On the basis of an estimated 6,740,000,000 barrels available in the ground in January, 1919, there should now (February, 1920) remain, in round numbers, 6,325,000,000 barrels. However, as stated, this estimate was published as distinctly conservative, though mention of this fact has not been made by those quoting it. At the present moment it appears as unlikely that the amount of oil that will actually be recovered will fall under 6,000,000 barrels as that it will be found to be more than 8,000,000 barrels, or about 25 per cent in excess. Therefore, viewing 6,325,000,000 barrels as distinctly conservative, 7,000,000,000 barrels may be regarded as a moderate but not distinctly liberal estimate of the oil remaining available in the ground in the United States February, 1920.² The estimate is subject to revision as exploration, including both the investigations by the geologists and tests by the drill, goes forward, and it will be revised from time to time.

Progress in Exhaustion of Domestic Deposits

Oil is now being taken from the ground in the United States at a rate very closely approaching 400,000,000 barrels per annum. This is five times the rate in 1901 and twice that of 1909. At the close of 1919 approximately 4,986,300,000 (nearly 5,000,000,000)

² A more liberal estimate by my colleague, E. W. Shaw, is "8 or 10 billion barrels." Proc. Nat. Gas Assoc. America, Cleveland, May 20, 1919. *The Income and Expense of Natural Gas Production*, p. 6.

barrels of oil had been produced in this country, since the Drake well was drilled in 1859. This is about 43 per cent of the original recoverable contents as estimated. All this oil that has been mined in the United States in sixty years would be taken out in thirteen years at the present rate of production. Impressive as this fact may be, it is less alarming than the realization that the recoverable oil in this country, according to the conservative estimate, would probably be practically exhausted in seventeen years if the 1919 rate (nearly 380,000,000 barrels) of production could be maintained for so long, while a reserve of 7,000,000,000 barrels, the moderately liberal estimate, would disappear in eighteen and one-half years. If an improbable excess of 2,500,000,000 barrels over the estimated amount be present, this excess would be enough to sustain the present draught for six and one-half years additional.

What improvements will in the next ten years be made in the process of extraction of the oil from the ground, and what the effects may be in recovering the great amounts of oil not "available" or recoverable by present methods remains to be seen. It is most important that studious attention be given to the problem of the more complete extraction of the oil than is possible by the methods now in general use. The estimated available supply should be increased in this way to the maximum.

Fortunately, the oil cannot so soon be taken from the ground. Even unheard of prices for crude, and scourging of the ground far more severe than that now in progress cannot within the next generation disclose all the oil pools in the strata, and though devices for

more rapid extraction may be invented and applied, the fields yet to be discovered cannot be drained so rapidly. Oil pools will be found, finally by accident, long after the search has waned and even in the next century. These are some of the reasons why, as will further be explained, the production of natural petroleum in the United States must pass its peak at an early date—probably within five years and possibly within three years—though the long sagging production curve may be carried out beyond the century.

The curve of the domestic production of petroleum, as compiled from statistics furnished by G. B. Richardson, geologist in charge of statistics of petroleum in the United States Geological Survey, is given in figure 1. It shows that for the last eight years the annual increase in the petroleum production of the United States has averaged around 20,000,000 barrels. The greatest increase (nearly 25,000,000 barrels) in marketed production was in the war year, 1917. The actual production increase from 355,927,000 to nearly 378,000,000,³ or about 22,000,000 barrels in 1919, as indicated by Mr. Richardson's preliminary figures, was due mainly to the unprecedented advances in oil prices, which have been the cause of wildly speculative activity in the oil business throughout the country, and, in part, to the fortunately wide extent and the profuse initial productivity of the north-central Texas district.

In January, 1919, when discussing the probable trend of the production of

³ It is expected by Mr. Richardson that the statistics of oil used in the field, and other items not yet reported will raise the total production for 1919 to about 380,000,000 barrels of 42 gallons.

petroleum in the United States,⁴ I expressed the view that the output of oil in 1919 could only with great difficulty be made to increase abreast of the increase of consumption in 1919, and that possibly within three years, and very probably within seven years, the production of this country would pass its climax, notwithstanding the growing deficiency as compared with the needs of the country. The increase in the output for 1919 seems at first largely to controvert this conclusion or at least to put farther ahead the beginning of the decline. However, even its significance as indicating postponement of the evil day is likely to be overestimated. The trend of the production curve has been maintained and the output forced upward in 1919, mainly by a great increase of over 3,500 (14 per cent) in wells drilled as compared with 1918,⁵ and an enormous influx of capital, notwithstanding great and inexcusable waste of the latter. The energy, funds and equipment applied to the winning of oil from the ground promise to be even greater in 1920, though many holders of stock in the hordes of misguided or fraudulent oil companies are doomed to disappointment. In view of the augmenting forces concentrated in the struggle and the considerable proven areas of very rich territory ready for drilling, it seems probable not only that the 1919 rate of petroleum production will be more than maintained in 1920, but that, under the favoring influence of high prices still advancing and the prospect

of a continued increase in consumption, the normal annual increase of 1919 will be exceeded. Besides responding to increased costs of production, the remarkable advances in crude oil prices are to be regarded as reflecting also both the deficiency in our domestic output and an apprehended difficulty in securing foreign oil in amounts sufficient to satisfy our growing requirements.

As north-central Texas (the so-called Ranger district) falls off in petroleum yield it is probable that the domestic output will receive support from the formerly withdrawn and other public oil lands in Wyoming and California which are at this moment being made available for leasing; the Gulf Coastal Plain will doubtless for a long time make contributions, with Louisiana giving immediate assistance, and the Mid-Continent region—the Osage for example—undoubtedly contains important undiscovered pools. With the decline of the Ranger district, oil companies will give attention to regions hitherto regarded as more or less unfavorable, and older oil states will be reëxamined. Oil will be found and developed in some of the regions of Wyoming, Utah, Colorado, Montana and Alaska, which are not now viewed very hopefully, and, probably, New Mexico, Washington, Oregon and some other possible states. Oil men are certain to return to find new production, probably in minor amounts, in Kentucky and will more thoroughly search Illinois, Indiana, Tennessee and the northern Appalachian region. Michigan will surely be further tested, with chances for some success, notwithstanding the thick mantle of drift which so nearly blankets the underly-

⁴ *Journal, Association of American Automotive Engineers*, Vol. IV, No. 5, 1919, pp. 361-363. Printed in advance of meeting, February 4-6, 1919.

⁵ *Oil and Gas Journal*, January 23, 1920, p. 50.



WORLD MAP OF DE



DEVELOPED AND POTENTIAL PETROLEUM RESERVES

PREPARED BY THE U. S. GEOLOGICAL SURVEY

1919
COMPILED BY EUGENE STEBINGER



country
, therefo
restic fiel
be more
y to sus
n rate af
now unc
d their p
able that
passed its
years o
possibly w
certain th
an early
oil world
dependent
r lands, c
ion may h
roduction
he distilla

Oil Shale

of the pe
country c
ial import
le deposits
he oil shal
s are a pos
s far great
ural petro
ey form a
o sustain a
r an indef
sent they a
sh value a
ow of cor
they can
ry the bu
ements.
interbedde
sisting m
organic del
roducts of
bly mainl

pe
pr
in
be
er
th
ve
pr
its
in
ne
th
la
at
ni
its
m
es
tic
th
m
3,
co
in
an
Th
pli
gr
19
th
oil
po
in
an
ve
sec
rai
mo
un
pr

4
En
Pri
191
6



ing structure. Not only must regions formerly abandoned be subjected to a more drastic review with testing, and regions damaged by water treated by new methods, but also regions rejected without testing will be given the most scientific attention. The culls and discards must be tried out, so far as the prices of oil and the resultant proceeds of wildcatting permit. It is far from improbable that the time will come when, the oil companies being unwilling to assume the risks of drilling in portions of the country, the state or the federal government will in some emergency be asked to test with the drill the possibilities of these areas at public expense.

Meanwhile, as the production peaks of fields now are passed and the yields decline, new fields, either still larger or in greater numbers, must be discovered and thrown in to fill the cumulative void. Not only must the 1919 rate of production be sustained but also greater and still greater increases are demanded. To thus continue increasing the domestic oil production of the United States for any appreciable term of years now seems impossible, even under the present extraordinary price stimulus. Failure to secure adequate supplies from foreign fields at competitive prices, and consequent further advances of the prices for domestic crude oil would, of course, drive our output to a maximum limited by the reduction of consumption demands as costs become prohibitive. In such a case all predictions would of necessity be declared off. The development of such a situation should not, however, be permitted, and steps should be taken to assure the needed foreign supplies at all times.

The welfare of the country demands it.

On the whole, therefore, after a review of the domestic fields, in which it threatens to be more and more difficult and costly to sustain even the present production rate after the most promising regions now under development have passed their peaks, it appears highly probable that the United States will have passed its production peak within five years or very soon thereafter, and possibly within three. Nothing is more certain than that this country must at an early date lose its supremacy in the oil world and become more and more dependent on the oil resources of other lands, except in so far as the situation may be saved by the successful production of artificial petroleum by the distillation of oil shales.

Oil from Oil Shales

No discussion of the petroleum resources of this country can overlook the great potential importance of our extensive oil shale deposits as possible sources of oil. The oil shale deposits of the United States are a possible source of oil in amounts far greater than all the available natural petroleum of this hemisphere. They form an enduring asset, sufficient to sustain an enormous ultimate load for an indefinite period. However, at present they are assets of undetermined cash value and, at best, difficult and slow of conversion or liquidation, and they cannot yet be drawn on to carry the burden of our petroleum requirements.

Oil shales are interbedded, sedimentary strata, consisting more or less largely of fossil organic debris and the decomposition products of plants and animals, probably mainly aquatic.

When sufficiently free from clay, sand, or other mineral matter, the oil shale layers or beds present both physical and chemical features characteristic of cannel coals, to which they are genetically related and into which they grade. Like other members of the cannel group, these fossil organic deposits are characteristically high in hydrogen and when decomposed (distilled) by heat, they yield large proportions of volatile matter, much of which may be condensed as oils. The latter differ in composition and qualities according to the methods, temperatures, etc., of distillation, and, according to the process, it is probable that they will be made essentially to constitute artificial petroleum. Generally, and by ordinary, simple, dry distillation they are asphaltic but most of them will yield paraffin, and other waxes in considerable amounts, and all contain nitrogen which varies, however, very greatly in the shales from different regions and formations.

Oil shales, in deposits of considerable thickness and extent, are found in different parts of the United States, but generally the thick deposits yield but few gallons per ton, while the rich deposits, including the low-grade cannel coals, are extremely limited in extent. Enormous amounts, in many strata of great thickness and relatively large area, are found bedded like coal in the Green River (Eocene) formation of northwestern Colorado, northeastern Utah, and southwestern Wyoming, and in a formation probably Miocene in age in northern Nevada.⁶

⁶ Winchester, D. E., "Oil Shale in Northwestern Colorado and Adjacent Areas," *United States Geological Survey Bulletin*, 641, pp. 139-198, 1917.

Experimental tests show that some of the purer beds of oil shale yield over 70 gallons per ton and certain parts of some of the beds are claimed to yield over two barrels per ton. D. E. Winchester, who has mapped many of the deposits for the United States Geological Survey, reports that in northwestern Colorado and northeastern Utah there is enough of this shale in beds three feet or more in thickness, and capable of yielding 22 gallons⁷ or more of oil to the ton by distillation, to provide as much as 40 billion barrels of oil from which five billion barrels or more of gasoline should be extracted. Larger proportions of gasoline should be produced by the employment of proper methods. If the deposits of southwestern Wyoming and the small areas of rich shale in Nevada be added, the roughly estimated production mentioned above may be enormously increased—possibly doubled. Deposits of oil shale of limited extent, and generally less rich, are present in a number of states, namely, Pennsylvania, Indiana, Kentucky, Texas, Wisconsin, Michigan and West Virginia.

What new oil fields may yet be discovered in other parts of the world, particularly the less explored regions,

Winchester, D. E., "Oil Shale of the Uinta Basin, Northeastern Utah, and Results of Dry Distillation of Miscellaneous Shale Samples," *United States Geological Survey Bulletin*, 691, pp. 27-55, 1919.

Condit, D. D., "Oil Shale in Western Montana, Southeastern Idaho, and Adjacent Parts of Wyoming and Utah," *United States Geological Survey Bulletin*, 711, pp. 15-40, 1919.

Ashley, G. H., "Oil Resources of Black Shales of the Eastern United States," *United States Geological Survey Bulletin*, 641, pp. 311-324.

⁷The average production of the Scotch oil shale distilled in recent years is stated to approximate 22 gallons per ton.

no one can foretell, but it seems probable not only that oil will be distilled from the shales of the Green River group long after the principal oil fields of the world have been exhausted, but also that the total amount that may be obtained from this source may approach the world's total production of natural petroleum. The fact that some of the rich deposits of phosphate in the Permian of Idaho and southwestern Montana are accompanied by shales, which on distillation yield small amounts of oil,⁸ suggests an interesting problem for the consideration of the chemical engineer.

How soon oil may be produced in this country by the distillation of oil shale on an industrial scale at a commercial profit, and how rapid the production may grow remains to be demonstrated. Over 40 companies are said to have been honestly organized for the production of shale oil in Colorado and Utah, and many companies have been formed for the sale of stock. The shale oil industry of this country is now in an experimental stage. A number of plants are already constructed or are building to try out different processes and conditions. Foremost among the elements to be determined are the best methods of retorting with reference to the recovery of the most valuable products, refining methods adapted to the particular shales in hand, and the possible by-products and their relative importance. Other questions to be considered concern water supplies and transportation problems; the establishment of great plants; the build-

ing of towns, and the housing, feeding, etc., of a great industrial population numbering hundreds of thousands of men. The development of a great shale oil industry is certain eventually to take place in this country, and, so far as concerns mere costs of production, it would seem that the recent advances in oil prices must bring it near to hand. Nevertheless, in view of the technological problems to be solved experimentally, it appears rather likely that shale oil will be sorely needed long before it is produced in amounts sufficient to bring appreciable relief, and much longer still before it can supply a large part of a consumption demand even no greater than that of the present day.

In view of this grave probability, the passage of the experimental stage, with its losses and waste of none too well guided capital, should be hastened by the establishment of testing plants and research laboratories by the government and by wise and foresighted investigation and tests on the part of the stronger oil companies. It is absolutely a matter of insurance of the public and country.

Oil shale industries have enjoyed a long existence in Scotland, France, and Australia, and oil from Scotch shales helped the British Navy to victory. However, it is an interesting circumstance, reflecting possibly changed conditions, that just now, when we are driven to greater efforts to establish a shale-oil industry in this country, the work of the Scotch plants, formerly running on shales of low oil yield, but of unusually valuable by-products, is being transferred to the refining of oils brought from British oil fields in the east, the labor costs being too high for

⁸ Condit, D. D., "Oil Shale in Western Montana, Southeastern Idaho, and Adjacent Parts of Wyoming and Utah," *United States Geological Survey Bulletin*, 711, pp. 15-40, 1919.

the profitable utilization of the shale in competition with oil more cheaply produced in increasing volumes from the wells of Egypt, Persia and India.

The use of oil shale is a means of relief of qualified adequacy, the benefit of which can at best be realized but slowly and laboriously. Our oil shales are an endowment of inestimable value on which we are certain, ultimately, to depend heavily, though the time and rate of that dependence will be largely controlled by the rate of development of foreign oil fields, the growth of the world demand, and by consequent competitive prices of natural oil.

Dangerous Growth of Consumption Demands

The increase, both present and prospective, in the consumption demands for petroleum in the United States is hardly less alarming than our growing dependency on foreign petroleum supplies, for if in recent years the United States has furnished very close to 66 per cent of the world's whole output of petroleum, our oil industry is reported nevertheless to have at the same time demanded more than we produce, this demand having amounted to over 80 per cent of the world's output in 1919. To the extent of nearly 47,000,000 barrels the United States is already living beyond her income.

The gap between the oil production and consumption curves, illustrated in figure 1, has not been eliminated even in the past year of inadequate automotive production and post-war readjustment; thus, while in 1919 our domestic oil production was forced to an increase of nearly 25 million barrels (7 per cent), our net importations of foreign oil—i.e., the excess of imports over

exports of crude—gained 14 million barrels (43 per cent). The oil requirements of the petroleum industry in the United States during the last year (1919) were, according to the preliminary returns, compiled by G. B. Richardson, of the United States Geological Survey, approximately 418,400,000 barrels, not including oil used on the leases, or probably nearly 421,000,000 in all.

It is stated that of about eight million motor cars, in round numbers, in the world, over 7,600,000 are in this country, which has been estimated to contain over 90 per cent of all the internal combustion engines. It is calculated also that the number of motor cars will ultimately exceed 12 million, if it is not restricted by fuel prices. Moreover, we are told in this connection that the orders in the hands of some of the large motor manufacturers are a year or more in arrears, and that internal combustion engines in vast numbers are to be made for tractors, airplane transportation services, launches, pumps, farm machinery and small power purposes throughout the country. On every hand new uses for oil are being devised and old applications multiplied. Not even the recent increase in prices of gasoline and other by-products can be seen to have caused a perceptible slackening in the rate of increase of consumption or to have curtailed plans for the more widespread and varied use of petroleum.

Not the least of the important consequences of the coal strike of last autumn has been the public apprehension of still higher coal prices, on account of which arrangements have been made or are making for the substitution of fuel oil for coal on railroads,

on ships, in shops, power houses, and even in heating plants, thus adding more millions, the sum of which cannot yet be counted, to the drain on our available oil resources. Further advances in the prices of coal cannot fail further to increase these consumption demands unless scarcity of oil from any source acts automatically as a check. The use of oil under steam boilers at an efficiency of 10 to 15 per cent in the generation of steam, when its use in the Diesel engine would give an efficiency of 25 to 30 per cent, is a criminal waste for even the present generation may well be called to account.

Between 1909 and 1918 the production of crude petroleum in the United States increased 95 per cent (see Figure 1), but the production of gasoline, as compiled by the United States Bureau of Mines, increased from around 13 million barrels to 85 million barrels, or 560 per cent, in the same period, while the number of automobiles and trucks increased 1700 per cent. The consumption of fuel oil by vessels engaged in foreign trade in 1919 was nearly double that of 1918. These examples illustrate the rapidity with which our industries, our commerce, and our standards of living have become dependent on petroleum, the third in value of our great mineral products.

Dependence of United States on Foreign Oil

As already noted, the production⁹ of petroleum from the oil fields in the United States during 1919, according to the preliminary statement by G. B. Richardson, of the United States Geological Survey, was 377,719,000 barrels,

⁹ Exclusive of oil consumed on leases and of producers' stocks except in California.

of which 371,579,000 barrels were delivered to refineries and other consumers in this country, leaving about 6,140,000 barrels which were added to stocks held by pipe-line, and other marketing companies. The increase of production was 6.12 per cent, while the increase in wells drilled¹⁰ was 14 per cent. However, any sense of security predicated on the addition of the small amount mentioned above to the domestic oil in storage fades away when it is recognized that the oil now in storage in the United States is not enough to supply this country for four months. For several months oil has been drawn out from storage, the draught for January, 1920, being 700,000 barrels. On the other hand, the importation of crude oil into the United States from other countries (predominantly from Mexico) has increased from 37,735,641 million barrels in 1918 to 52,746,567 barrels in 1919, or 40 per cent. Deducting for approximately 5,925,587 barrels of crude oil exported to other countries, the net excess of our imports over our exports of crude oil for the year 1919 amounted to 46,820,980 barrels, as compared to 32,834,950 barrels in 1918. The significant facts are not only the large total amount of foreign oil necessary to meet our requirements, but also the amount (14 million barrels) of the increase for the year. In short, our demand for foreign oil has increased over 42 per cent during 1919, notwithstanding the temporary handicaps of both commerce and industry. Reports received for January, 1920, show a net importation for that month of 5,865,293 barrels, a rate of 52 per cent increase over 1919.

¹⁰ *Oil and Gas Journal*, Tulsa, Oklahoma, January 23, 1920.

The reports of the Bureau of Foreign and Domestic Commerce¹¹ show that during the fiscal year¹² ending June 30, 1919, the total oil exports of the United States, including both crude and refined oils, such as fuel, gas, illuminating and lubricating oils, gasoline, light distillation products and residuum, altogether amounting to approximately 60,215,831 barrels, were about five million barrels, or 8 per cent less than during the preceding fiscal year. But for this falling off in our exportation of refining products due, in part, to post-war difficulties of industrial and financial readjustment in Europe, the actual increase in our importations must have been very nearly, if not quite as great as, the increase gained at great labor and cost, in our domestic production, and this in the face of increased prices for crude oil and oil products.

The program of the United States Shipping Board is reported to provide for an aggregate of 1,734 oil-burning merchant ships by 1922. To drive this merchant marine the board has called for 50 million barrels of fuel oil for the year 1920, and 30 million barrels for the first half of 1921. At this rate it may be anticipated that the fuel oil requirements for the last half of 1921 will be near or over 40 million barrels, and that the fleet, when completed, will require an annual supply of between 70 and 90 million barrels. This merchant marine supply, which is approximately equivalent to one-half of all the fuel oil now produced in the United States, constitutes a new burden superimposed on an already over-

loaded demand, and in its entirety or its equivalent must be drawn from foreign sources. If the requirements of our growing navy be added, the demands for oil for sea use will probably approximate 100 million barrels of fuel oil per year. The people of the United States will doubtless curtail their use to assure oil for the navy, but whether they will willingly go without oil at home on account of pride in the merchant marine, and in order that the ships under our flag may have ample supplies of oil as cheap as those obtained by rival ships in all parts of the world, seems extremely doubtful. It is interesting to note that our oil companies, including those operating in Mexico and Central America, are at present (March, 1920) dilatory in making contracts with the Shipping Board for more than a small part of the oil needed by our ships in 1920.

A British oil economist calculates¹³ that by 1925 the petroleum requirements of the United States will exceed 500 million barrels and that at a later date America will become more and more dependent upon British supplies. Another high authority, W. C. Teagle, president of the Standard Oil Company of New Jersey, estimates¹⁴ that in 1925 the requirements of the petroleum industry in this country will approximate 650 million barrels, an increase of more than 220 million barrels over the requirements of 1919. Unless conservation of oil through curtailment of use—for example, as fuel burned under steam boilers to generate steam—is forced automatically by scarcity

¹¹ *Commerce Reports*, No. 39, February 16, 1920, p. 932.

¹² All other figures in this paper are for calendar years.

¹³ *Oil and Gas Journal*, Tulsa, Oklahoma, November 20, 1920.

¹⁴ *Oil Trade and Drug Reporter*, New York, February 2, 1920, p. 15.

of oil and consequent prohibitive prices, or is sooner and more wisely brought about artificially by regulation, it seems probable to the writer that the demands of our oil industry will considerably exceed 600 million barrels, or possibly 650 million, as estimated by Mr. Teagle in 1925, though by that time our exportation of refined oils to some of the foreign markets will probably be reduced by competition of foreign oils nearer at hand and more cheaply produced.¹⁵

A drain of over one-half billion barrels, even if the annual demand be not further increased, would, if taken from the oil fields of the United States, probably exhaust the oil resources remaining available in the ground in fourteen years, or in sixteen years, if we assume that our recoverable oil possibly amounts to so much as eight billion barrels, which to the writer seems very improbable. It is fortunate for the country that the oil cannot so rapidly be extracted. On the other hand, it also seems to the writer quite improbable that an annual production of natural petroleum amounting to so much as 450 barrels can be won in any year from our domestic oil fields, the peak of whose production is likely to be passed by 1925.

On the whole, therefore, we must expect that, unless our consumption is checked, we shall by 1925 be dependent on foreign oil fields to the extent of 150,000,000 barrels and possibly as much as 200,000,000 of crude each year, except in so far as the situation may by that time, perhaps, be

helped to a slight extent by shale oil. Add to this probability the other greater probability that within five years—perhaps three years only—our domestic production will begin to fall off with increasing rapidity, due to the exhaustion of our reserves, and it becomes evident that, except for such relief as may come from shale oil production, America's future in oil will yearly become more and more completely dependent on supplies to be brought from foreign fields. This we cannot evade and must prepare for.

FOREIGN OIL RESOURCES

Estimates of Recoverable Oil in Other Countries

No estimate really worthy of the name can yet be made of the oil resources of the world. The best that can be offered is a scientific guess carefully formulated on the basis of the data now available and necessarily subject to an enormous coefficient of error. Of the important producing oil regions in other countries, only Roumania, Galicia, and the Baku and Grosny districts of Russia are so far developed as to offer criteria comparable to those of the United States for the estimation of their oil reserves. In none of the producing or prospective oil regions of other countries in which are located the great oil fields of the rest of the world have the geologic data been published, and in particular have the stratigraphy and structure been so far described by specialists in the geology of oil fields, as are the producing and prospective fields of the United States.

In many of the other countries, of which Mexico is an illustration, the detailed geological examinations, pos-

¹⁵ However, the use of petroleum products in countries where they are now used to a slight extent or not at all is likely, on the whole, to greatly expand the market and strengthen it.

sibly accompanied by tests by the drill, have been confined to restricted areas, with but reconnaissance or even more indefinite data as to the remaining regions, which, on account of scattered surface indications or other criteria are believed to be oil bearing to an important degree. In some regions we have only the evidence of oil and gas seeps and pitch or asphalt deposits scattered in greater or less abundance over great areas, in which general geologic conditions, similar in essential characters to those of producing districts, are reported to prevail. In other regions, of which the near East, including Mesopotamia and Persia, offers the most striking example, a tremendous potential value is predicated with reasonable safety on the character, relative abundance, and wide-spread distribution of well-recognized surface indications of the presence of petroleum, though geological details are meager, and actual oil production—the latter in great abundance—is essentially restricted to comparatively few areas, the wells being mostly confined to a small area of testing in the upper part of the Karun River basin.

In countries like the Philippine Islands, Madagascar and Australia, the indications leave no doubt as to the presence of potential oil fields of some importance, but the geological information and developmental results where tests have been made are quite insufficient to permit an estimate deserving confidence as to the relative consequence of their oil resources. In portions of many of the countries it is possible only to base deductions as to probable oil contents upon analogies drawn after careful study of the data as to surface conditions and geologic

relations, and a comparison of these with those of other regions in which exploitation has demonstrated the extent of the oil deposits. Hence, while the oil resources of Roumania, Galicia and the Baku district, and a number of the older but relatively insignificant areas of western Europe, such as the Italian and Alsatian fields and the field in northwest Germany, can be roughly estimated, with a range of probable error in some cases as close as in the estimates of the oil in the United States, the reliability of the forecasts of the oil contents of the remaining regions ranges all the way to carefully made and conservative guesses, based on whatever information is in hand, with due consideration of the kind as well as the amount of the fundamental data. Unfortunately, some of the most important prospective oil regions of the world fall into the latter category. On account of this fact, any estimates made by any geologist of the oil resources of the world are likely to differ from those made by any other geologist, are subject to revision from time to time as more adequate information accumulates, and must not be given a weight of authority which they do not deserve.

The general distribution of the principal petroleum reserves of the world, so far as they are demonstrated by development supplemented by favorable geological data and reported surface indications of oil, has been somewhat diagrammatically represented by Mr. Eugene Stebinger, chief of the Foreign Mineral Section in the United States Geological Survey on a map here shown as Plate I. The circles, drawn in different sizes to indicate the relative importance of the estimated oil reserves of the different

regions, are centered near the centers of the actually productive or prospective oil fields, though the geographic distribution of the oil indications, as in Argentina for example, may extend through great stretches of country. No attempt is made to show all regions in which oil indications are reported, but concerning which the evidence in hand is not sufficient to prove them to be important.

To avoid the appearance of unwarranted exactness and finality, Mr. Stebinger tentatively represents his somewhat generalized conclusions as to the amounts of the oil reserves in each area by graphs in which the oil is shown in terms of relative importance or quantity, rather than in terms of barrels or metric tons. It will be noted that for a number of areas, like Bolivia, Northern Argentina and China, where little or no boring has been done at promising localities, the relative importance of the oil resources is shown by unshaded circles in contrast with shaded ones for the fields with settled production.

In the following table are given Mr. Stebinger's estimates for the regions represented by the circles on his map as grouped according to political boundaries or to natural petroleum provinces which transgress national boundaries. This table expresses, first, the relative values of these groups as compared with unit value for the United States, and, second, the corresponding quantities when unit value for the United States is seven billion barrels, the moderately liberal estimate for the petroleum of the United States. Totals are also given separately for the eastern and western hemispheres and for areas north of the equator and south of the

equator. In submitting these estimates which, through his courtesy, are here published for the first time, Mr. Stebinger calls attention to the fact that these totals suggest a surprisingly evenly balanced distribution of oil between the eastern and western hemispheres, and, as with the distribution of the world's coal reserves, a great preponderance of tonnage north of the equator.

OIL RESOURCES OF THE REGIONS REPRESENTED
BY CIRCLES ON THE WORLD MAP, PLATE I,
AS ESTIMATED BY EUGENE STEBINGER, OF
THE UNITED STATES GEOLOGICAL SURVEY

Country or Region	Relative Value	Millions of Barrels
United States and Alaska.....	1.00	7,000
Canada.....	.14	995
Mexico.....	.65	4,525
Northern South America incl. Peru.....	.82	5,730
Southern South America, incl. Bolivia....	.51	3,550
Algeria and Egypt....	.13	925
Persia and Mesopotamia.....	.83	5,820
S. E. Russia, S. W. Siberia and the region of the Caucasus....	.83	5,830
Roumania, Galicia and western Europe....	.16	1,135
Northern Russia and Saghalien.....	.13	925
Japan and Formosa....	.18	1,235
China.....	.20	1,375
India.....	.14	995
East Indies.....	.43	3,015
Total.....	6.15	43,055
Total eastern hemisphere.....	3.03	21,255
Total western hemisphere.....	3.12	21,800
Total north of equator..	5.20	36,400
Total south of equator..	.95	6,655

As indicated in the preceding table, the natural petroleum resources of those regions of the world, for which the relative amounts are tentatively indicated by circles of different magni-

tudes on the map, are estimated at approximately 43 billions of barrels. Far as it may be from the exact amount, this total is to be regarded as conservative not only because it represents the cautious judgment of a well-trained and experienced oil and gas geologist based on the best information available at the present time, but also for the reason that the value assigned to the oil fields of the United States is conservative. It is to be expected, and it is certain that the appraisals of the different regions roughly indicated on the map will undergo radical changes as development proceeds and geological exploration is carried on in greater detail and with special reference to oil possibilities, and it is, of course, possible that the reserves may in some instances have been overestimated; but it is highly probable, on the other hand, that in many of the less civilized and geologically less known regions, the actual reserves may prove to be much, perhaps many times greater, than has been tentatively estimated.

It is to be noted that (1) no value is given on the map or in the above table for the oil resources of the regions marked by squares; (2) oil indications are known in regions not indicated on the map by any symbol, although in most such instances the geologic conditions seem to preclude reserves of great importance; and (3) finally, there are in other countries many untested regions in which the geological conditions appear to be favorable for the occurrence of oil fields, though surface indications of oil have not yet been reported, possibly due in part to insufficient exploration. In this connection it will be remembered that in

many oil fields in the United States the oil deposits are not indicated at the surface by such features as oil or gas springs, tar or asphalt deposits, etc.

It is highly probable that oil in considerable amounts will eventually be discovered in areas of northwest Canada, where only a limited commercial production has so far been obtained. Other foreign areas in North America which seem likely to make contributions, possibly of minor importance, to the world's supply, include Central America, Santo Domingo, and Lower California. In South America important new centers of production seem probable along a very extensive stretch of territory bordering the east slopes of the Andes, and, in addition, the gently flexed Paleozoic and Mesozoic areas of northeastern Brazil would seem to be possibly oil bearing. Madagascar offers much promise; and conditions favorable for developing oil fields appear to be present not only in Angola and other regions of west Africa, but possibly in east Africa also, while it is more than probable that the northern part of this great continent will finally reveal stores of oil more widespread and far greater in amount than is indicated on the map. Australia, Tasmania and New Zealand may yet disclose producing areas of value and it seems reasonable to expect new discoveries of importance in parts of India not indicated by circles. Arabia, Palestine, Armenia and Anatolia all offer thoroughly circumstantial indications.¹⁶ Also it seems rather probable that oil will be produced in portions of Spain, Austria and other countries of western Europe

¹⁶ See Schweer, Walther, *Die türkische-persischen Erdölorkommen*, Abh. Hamburg. Kolonialinstituts, Vol. 40, 1919.

where, as until recently in Great Britain, its presence may have gone unsuspected. The relatively unaltered Carboniferous and Devonian basins of Russia are practically certain not merely to disclose new areas of production, but also to furnish extensive supplies of oil probably rich in lubricants, while Siberia, about which geological information is so greatly desired, and which is said to carry indications of oil deposits in Trans-Caspia, Turkestan, Kamchatka, and notably in northern Saghalien, may reasonably be expected to contain oil bearing areas in other regions of its Tertiary, Mesozoic and Paleozoic formations. China, in which kerosene is reported to be selling now at \$1.40 per gallon, has oil indications in four at least of her provinces. It appears probable that oil is present in Tertiary and Mesozoic basins, scattered from Persia and Transcaspia eastward as far, at least, as Gobi. Finally, the results of slight testing at a few points and the evidence of numerous oil seeps in a number of the Philippine Islands, as recently summarized by Warren D. Smith,¹⁷ make fairly certain the presence of commercial oil deposits in these islands, which should be examined and fully tested by the United States, for, on account of their geographical positions with reference to world commerce, the oil deposits of these Islands may be found to be of particular value to the navy and merchant ships of this country.

The evidence as to the probable presence of additional oil reserves in the areas just reviewed is in most cases in-

sufficient to serve as a basis for more than the wildest forecast. However, these forecasts, or geological guesses, formulated conservatively with the probability that deficiencies will be very much more than compensated by excesses, lead me to conclude that there are probably 20 billion barrels of oil available in the world in addition to the 43 billion barrels contained in the regions covered by Mr. Stebinger's estimates quoted above, or as much in round numbers, as 60 billions of barrels in all. Mr. Stebinger's estimate of the oil in the regions indicated by circles may be roughly distinguished as oil in sight; that of 60 billions as total recoverable oil. This estimate of the world's total recoverable petroleum resources, in which Mr. Stebinger concurs, may differ very widely from estimates by other geologists, but we regard it as fairly conservative. It will, we believe, fall considerably within the ultimate recovery of natural petroleum now remaining in the world's underground storage.

Strongly in contrast with the oil reserves (oil in sight) of the principal known regions as indicated on the map, Plate I, is the relative rate of annual draft on these fields to supply the world's uses, which in Plate II is shown in blocks definite in scale and based on the production records. A glance of comparison at these maps shows cause for alarm that can only increase when the situation is considered more in detail.

The production of oil in the United States during 1919 approximated 378 million barrels, while our consumption requirements called for the addition of 47 million barrels of foreign oil in excess of the amount of crude petroleum

¹⁷ Smith, Warren Du Pré, *Petroleum in the Philippines*, Transactions American Institute of Mining and Metallurgical Engineers, Advance Publication, February, 1920.

exported by us to other countries, the total net requirements of the American oil industry for the year being over 418 million barrels. It has been noted also that, barring financial disaster or further oil shortage and consequent prices markedly restrictive of consumption, the annual petroleum requirements of

at the present rate, to the last barrel.

Contrast this situation and its disheartening prospect with the situation of the rest of the world. A review of the accompanying table of world petroleum production, compiled by G. B. Richardson of the United States Geological Survey, shows that

WORLD'S PRODUCTION OF CRUDE PETROLEUM IN 1918 AND SINCE 1857, BY COUNTRIES

Compiled by G. B. Richardson, United States Geological Survey

Country	Production, 1918			Total Production, 1857-1918		
	Barrels of 42 Gallons	Metric Tons	Per Cent of Total	Barrels of 42 Gallons	Metric Tons	Per Cent of total
United States.....	355,927,716	47,457,029	69.15	4,608,571,719	614,476,230	61.42
Mexico.....	63,828,327	9,506,289	12.40	235,182,489	42,564,549	3.80
Russia.....	40,456,182	5,520,066	7.86	1,873,039,199	247,856,218	24.96
Dutch East Indies ^a ..	13,284,936	1,836,914	2.58	188,388,513	25,465,114	2.51
Roumania.....	8,730,235	1,214,219	1.70	151,408,411	21,058,193	2.02
India.....	^b 8,000,000	1,066,667	1.55	106,162,365	14,154,982	1.41
Persia.....	7,200,000	^b 1,000,000	1.40	14,056,063	2,952,231	.19
Galicia.....	5,591,620	777,640	1.09	154,051,273	21,424,303	2.05
Peru.....	^c 2,536,102	338,147	.49	24,414,387	3,255,251	.33
Japan and Formosa..	2,449,069	326,543	.48	38,498,247	5,133,100	.51
Trinidad.....	2,082,068	289,578	.40	7,432,391	1,033,712	.10
Egypt.....	2,079,750	277,300	.40	4,848,436	646,458	.07
Argentina.....	1,321,315	192,612	.26	4,296,093	617,176	.06
Germany.....	711,260	^b 100,000	.14	16,664,121	2,254,974	.22
Canada.....	304,741	40,632	.06	24,425,770	3,256,769	.33
Venezuela.....	190,080	26,400	.04	317,823	44,142	.02
Italy.....	35,953	^b 5,000		973,671	138,588	
Cuba.....				19,167	2,662	
Other countries.....				397,000	55,139	
	514,729,354	69,975,036	100.00	7,503,147,138	1,006,389,791	100.00

^a Includes British Borneo.

^b Estimated.

^c Estimated in part.

the United States are likely, by 1925, to exceed 600 million barrels. It has also been pointed out that our domestic production which may not go over 425 million barrels a year—and is not likely ever to exceed 450 millions of barrels—would exhaust the estimated seven billion barrels of natural petroleum remaining available in the ground in the United States in eighteen years if the reserves could be drained continuously,

over 60 per cent of the oil produced in the world since 1857 has been drawn from the stores of the United States and that in 1918, 69 per cent of the world's oil supply came from our reserves. The collective consumption requirements of all countries outside of the United States¹⁸ appear at the present

¹⁸ The net importation of petroleum by the United States may here be regarded as nearly balanced by the exports of refined oils, fuel oil



MAP OF THE WORLD



WORLD SHOWING PRODUCTION OF PETROLEUM FOR 1917

PREPARED BY THE U. S. GEOLOGICAL SURVEY

1919

Compiled by Eugene Stebinger



has outgrown
olds and even
f over 50 mi
endent upon
This amount
million b
deposits of c
en shall we
overdraught
s by the hun
be required
ospective gro
sing demands
trucks, trac
ys, power pla
; the navy
ine, but
waning dom

can consump
at present se
may consti
menaces to
he United St
ty of competi
orld. In Ame
urposes for wh
or more econ
ridled. We h
er uses raise
on, but, with
s, we have u
t to its gros
ployment.
most extravag
e are becom
il industries n
it of the wor
hth as much
the rest of
for four times
intries togeth
s of Galicia e
y, 1920, were at
annum.

exp
tot
oil
mi
tha
the
ma
the

Un
Me
Ru
Du
Ro
Inc
Pei
Ga
Pei
Jap
Tri
Eg
Ar
Ge
Ca
Ve
Ita
Cu
Ot

th
to
al
pr
m
ev
wi
lic
m
U
re



ent moment to impose a drain on the oil resources of the rest of the world (outside of the United States) a little less than one-half as large as the annual draft on the oil fields of our own country, or, in round numbers, about 180 million barrels annually. Therefore, if this rate of annual drain on the oil reserves of the rest of the world be similarly maintained to the exhaustion of the last barrel, the reserves of foreign "oil in sight," *i.e.*, 36 billion barrels, should last 200 years, while, the total reserves of 53 billion barrels¹⁹ in the rest of the world should suffice for nearly 300 years. Oil for the United States for eighteen years, at the present rate, and oil for the rest of the world for 300 years!

Peril of the United States

It is possible that under the current unprecedented stimulus our domestic production of natural petroleum may be brought up to what the writer considers an improbable maximum of 450 million barrels per annum within the next three years, if ever, but it seems very doubtful whether the oil fields of this country can be goaded to a yield greater than that. Much depends on whether lucky strikes are bunched or irregularly scattered through a long interval. It has been shown not only that such a rate of production would probably exhaust our oil fields in about sixteen years but also, on the other hand, that the turn soon must come when our production will begin to sag and decline. Already the American

petroleum industry has outgrown the capacity of our oil fields and even now it is to the extent of over 50 million barrels²⁰ yearly dependent upon oil from foreign sources. This amount is included in the 180 million barrels drawn against the deposits of other countries. What then shall we do, when to our present overdraft must be added the millions by the hundred additional that will be required not only to meet the prospective growth of our rapidly increasing demands for oil for automobiles, trucks, tractors, airplanes, more railways, power plants, vast new machinery, the navy and the merchant marine, but also, later, to replace a waning domestic production?

The growing American consumption of petroleum, which at present seems almost irrepressible, may constitute one of the greatest menaces to the future prosperity of the United States and to its later equality of competition with the rest of the world. In America the use of oil for all purposes for which it is more convenient, or more economical, is practically unbridled. We have not only made its higher uses raise the standards of civilization, but, without thought of the future, we have unrestrainedly degraded it to its grossest and most wasteful employment. We have developed the most extravagant habits, which in time are becoming necessities, until our oil industries now require over 80 per cent of the world's output. With one-eighth as much oil in the ground as has the rest of the world, we are calling for four times as much as all other countries together. The total oil resources of Galicia esti-

lubricants and residuum to other countries. See *Commerce Reports*, No. 39, February 16, 1920, page 932.

¹⁹ Total world's recoverable petroleum less that of the United States.

²⁰ Net imports for January, 1920, were at the rate of 70,383,000 barrels per annum.

mated by a European engineer at 47,000,000 tons²¹ would not meet the requirements of the United States for a single year. If all available oil in the world be 60 billion barrels, as above estimated, and this were to be reserved for the exclusive use of the United States, it would satisfy our 1919 rate of consumption demands—not to mention the future—for but 140 years.

There is no substitute for petroleum except some other one or more mineral oils. Alcohol for use in internal combustion engines and vegetable oils for lubrication cannot be produced in the stupendous amounts required for present needs without destructively competing with foods and other vegetable products, which the public cannot and will not sacrifice on such magnitude of scale for the sake of building up foreign commerce or supplying our navy. This has in effect been proved by the history of the last ten years. On the other hand, as Mr. Requa has pointed out, the establishment of a shale oil production, capable of replacing the present output of natural petroleum in the United States, will require the organization of an industry with a labor complement practically equal to that of our present coal mining industry. Such a work, which has to be built up from the bottom, including transportation, the founding of cities and enormous operative works, cannot be accomplished in a few years; the labor strain alone would be too great. There will be no flowing wells in the shale regions; every ton represents individual labor and costs of mining, preparation and reduction. Oil shale is a bulkhead,

the distance to and efficiency of which cannot yet be clearly seen. Oil from any source, shale or other, must be as abundant and must be marketed as cheaply in the United States as oil is had in other countries if this country is not to be subjected to economic handicaps to its prosperity and progress.

The oil situation confronting the United States is genuinely critical and demands the most sober thought and wise but prompt action. It is time to call a halt and inquire whither we are drifting and where we shall end. Prevention of waste, restriction of employment and greater efficiency in recovery and in use will give great assistance, but all combined will not meet the situation nor solve the problem. The United States must either assure itself of sufficient oil for the future, or it must change its habits and cut down its use of oil. Curtailment, probably drastic, will in any event ultimately be forced to some extent, notwithstanding the production of oil from shale, and the public cannot too soon ask itself as to what extent the inefficient use of oil to generate steam in boilers is to be tolerated—not to say increased. On the other hand, the acquisition of sufficient reserves by our nationals should assure cheaper and more abundant oil, relieving the financial and industrial pressure to be endured as the compulsory dependence of the United States on an oil shale industry eventually becomes more widespread and complete. This country should not bear the industrial burden of advanced dependence on oil shale so long as there are ample stores of oil to be produced and brought more cheaply from some other quarter of the world.

²¹ Commerce Reports, No. 43, p. 1042, February 20, 1920.

IMMEDIATE ACTION FOR PROTECTION OF THE UNITED STATES NECESSARY

Plainly, if the United States is to have oil to satisfy its needs in the future, it must secure adequate reserves in foreign countries, buy oil from foreign oil companies, or depend on oil shale production to fill the void. To depend on oil shale is to trust to uncertainties both as to costs and as to ultimate results, and, as has been noted, is at best to superimpose on our present social and industrial fabric an enormous and complex new industry rivalling our coal mining, salvaging but a part of our present oil industry and requiring many years for its development. Sooner or later—perhaps within a year—a commercial shale oil industry may be born in this country, but that it can originate soon enough or become large enough to offer any considerable contribution before our domestic petroleum production is already on the wane seems to the writer improbable. Shale oil production cannot be made to meet any emergency demands that may meanwhile arise. Finally, if shale oil yielding the principal and indispensable petroleum products, cannot successfully be produced and marketed as cheaply as natural petroleum from other countries, the public cannot be expected to build up and sustain a shale oil industry, unless it be under subsidy as a protective measure.

As the outlook must now be viewed, it is practically certain that after a time America will be buying oil from our commercial rivals in quantities greater by far than we have ever sold to them, to say nothing of the prices paid. But, while this may be inevitable, it surely should be escaped as far as

possible. If we are to have these oils as cheaply as they are sold in the home countries; if our industries, our transportation, our navy and our standards of living are to be safeguarded in advantages as great as those of our rivals and if our merchant ships are to get their fuel oil at prices as low as those paid by rival ships, the oil supplies needed must be in the control of our own nationals, not only now but throughout. Our prosperity and our prospects, so far as they may be affected by this important and indispensable mineral commodity which influences the daily life of every citizen, must not be subject to prejudicial regulation or discriminative restriction by any foreign power, whether ally or enemy. Only by assuring control of our nationals over the oil supplies required by this country can the protection of our future be guaranteed.

When, however, attention is given to the duty of assuring the oil reserves necessary to supply America as long as any other country enjoys an equal measure of oil adequacy we find many of the great oil regions of the world closed to us by our rivals who in many other regions have secured the lion's share or are now, with an efficiency possible only under governmental aid, ceaselessly gathering in all that is good.

On Mr. Stebinger's map are indicated roughly, (1) the regions in which American oil companies either cannot acquire concessions and produce and market the oil contents, or can do so only under restrictions making it necessary to more or less completely surrender control of the organization if not of actual operations to the nationals of some other country; and (2)

those areas in which the citizens of this country may acquire concessions in accordance with essentially open-door policies. The differentiation shown on the map is tentative, possibly erroneous, and assuredly subject to revision, with, however, immediately prospective extensions of the first class.

The situation as it existed in May, 1919, is summarized in a comprehensive and informing report submitted with recommendations by Director Van H. Manning of the United States Bureau of Mines to the Secretary of the Interior, and printed in the *Congressional Record*, for July 26, 1919 (see p. 3515). According to this report the nationals of the United States are, in general, either excluded from acquiring oil concessions in the territory, colonies, and dependencies and even in lands in the spheres of influence of Great Britain (with the exception of Canada), France, Japan, and the Netherlands, or permitted to do so only under restrictions and governmental privileges of authority that constitute either effective exclusion or loss of control and management according to the case.

It appears that aliens are excluded from prospecting for oil in Burmah, India, Persia (wholly?), Uganda (probably) and the United Kingdom; and governmental policies of exclusion of other nationals from control of oil supplies obtained in Algeria, Australia, Barbadoes, British East Africa, British Guiana, France, French West Africa, Guatemala, Japan, Formosa and Saghalien, Madagascar, Mexico (?) New Guinea, and probably in South Africa. Provision for the legal or administrative exclusion of aliens from most of these countries are already effective. Such

provisions are met also in Venezuela and Uganda.

According to reports, mineral rights cannot be transferred to aliens in Australia, Barbadoes, British East Africa, British Guiana, the Dutch East Indies, France, French West Africa, Guatemala, India (probably), Madagascar, the United Kingdom, Japan (practically), Trinidad, in part, Venezuela (qualified) and, except that now held by other nationals, in Roumania and Slovachia.²² It is stated that restrictions are placed on aliens in granting oil rights or concessions temporarily in two districts of Colombia, and, conditionally, in the new territory of Roumania.

Ownership of the oil in the ground rests in the governments of Bolivia, Costa Rica, France, French West Africa, Slovachia, South Africa, Uganda, the United Kingdom, and Venezuela and, in part, in Argentina, Australia, British Guiana, Canada, Colombia, Ecuador, India and Trinidad; and movements further to vest oil rights in the state are in progress in Colombia, in Dominican Republic, Mexico, Roumania and Russia.

Whether oil lands in Mesopotamia, Palestine, the northern strip of Persia, Armenia, Arabia, Turkey and German East Africa—all marked by queries on the map, Plate I—will be open to access by our nationals after the mandates or other governmental arrangements are made for those countries remains to be seen. The present outlook does not inspire optimism.

²² Domestic oil companies may not pass under foreign control in Australia, Barbadoes, British Guiana, Burmah, the Dutch East Indies, France, French West Africa, Guatemala (?) Madagascar, Trinidad, the United Kingdom, and probably in India.

Behind the curtain of secret diplomacy the rich oil reserves of the unappropriated mandatories of the near East and of the Caucasus-Trans-Caspian regions are stakes of a great game during which more than one political boundary is likely to be adjusted to meet the oil ambitions of a prospective protector, while in portions of Latin America the stresses of commercial and political diplomacy are fully exerted to the disadvantages of our nationals. Even during the long war, oil geologists in the employ of the French, the British, and the organically allied Dutch Shell interests have been examining the most remote lands including some of the unstable countries, and in certain regions have carried on their search at the very heels of the armies. According to recent British oil news the division of the Mesopotamian oil regions between the French and British has been agreed upon, and an understanding formulated in accordance with which Great Britain and her European allies will control the oil resources of the Mediterranean region.

Government participation in oil production is found in Argentina, Australia, Bohemia, Great Britain, and probably Egypt. The British government has established a petroleum administration; owns a controlling partnership with veto powers on the board of directors in the Anglo-Persian oil company, which controls the oil resources of the greater part of Persia; gives financial assistance to its nationals engaged in oil development and is in every possible way promoting the acquisition by companies under British control or companies exclusively British, of oil reserves in all countries, including our own,

As the case now stands, our nationals are either distinctly or in effect shut out of the regions containing nearly one-half of the oil in sight in the rest of the world if the open door policy is not assured in the mandatory countries. Further, if to the petroleum resources in the countries now held by Great Britain, France and the Netherlands, there be added the concessions held by their nationals in producing or prospective oil regions of other countries, the total oil resources in the control of these nations will probably exceed three-fourths of the world's oil reserves outside of the United States. An open door policy, in the mandatory countries, at least, is an economic necessity to the United States.

Such is the prospect confronting America, whose stores have to date furnished two-thirds of the world's petroleum supplies, whose growing requirements absorb over 80 per cent of the world's present production, and whose reserves are estimated to be enough to meet her present consumption rate for less than eighteen years. The increased use of the internal combustion engine, which, incidental to the great awakening following the war is already noticeable in the hitherto less progressive or even barbaric countries of the world, cannot fail to cause a great growth in the foreign demand for oil which when once under way, will gain great momentum, thus bringing augmenting pressure from all sides in the world's competition for oil. In fact, it probably is no rash prediction to forecast a world's shortage of petroleum within the next twenty years, with the likelihood that the world's supplies will be insufficient within fifteen years.

Most earnest warnings of the im-

pending danger have been issued by Director George Otis Smith,²³ of the United States Geological Survey; Director Manning²⁴ of the United States Bureau of Mines; Franklin K. Lane,²⁵ Secretary of the Interior, and M. L. Requa, director of the petroleum division of the late Fuel Administration. A joint memorandum by Directors Manning and Smith, and Mr. Requa will be found in the congressional record above cited.

The situation as viewed from our rival's standpoint is analyzed with unusual perspective by E. Mackay Edgar in *Sperling's Journal* for September, 1919, from which the following extracts are quoted as wholesome and profitable food for American thought:

The time . . . is coming, is, indeed, well in sight, when the United States, partly through recklessly improvident exploitation and partly through natural processes of exhaustion, will be nearing the end of some of the available stocks of raw materials on which her industrial supremacy has been largely built. . . . The processes which have practically stripped Ireland of trees are operative in the United States over a far wider territory, on a yet more appalling scale, and in connection with many other sources of national wealth. The size and magnificence of the American inheritance and the rapidity and wantonness with which it has been squandered are an almost incredible commentary on human

folly. On no country, perhaps, had "affluent Fortune emptied all her horn" in such varied and bountiful profusion, and no country could have shown itself more utterly ungrateful. The Americans have dealt with their resources, and deal with them today, in the pioneer spirit of sheer, unmitigated pillage. . . .

America has recklessly and in sixty years run through a legacy, that, properly conserved, should have lasted her for at least a century and a half. . . . But the effects of fifty years of negligence and inefficiency are now becoming visible. Just when Americans have become accustomed to use twenty times as much oil per head as is used in Great Britain; just when invention has indefinitely expanded the need for oil in industry; just when it has grown to be as common and as true a saying that "oil is King" as it was twenty years ago that steel was king; just when the point has been reached where oil controls money instead of money controlling oil—the United States finds her chief source of domestic supply beginning to dry up and a time approaching when instead of ruling the oil market of the world she will have to compete with other countries for her share of the crude product. . . .

America is running through her stores of domestic oil and is obliged to look abroad for future reserves and . . . these reserves, constituting a key position in international industry, are very largely in British hands or controlled by British capital. Before very long America will have to come to us for the petroleum she needs. . . .

The main sources of the world's supply of oil in the near future will have to be looked for outside of America. . . .

If Americans have failed to develop oil fields of their own in other lands, they will become more and more dependent upon foreign sources for the supply of one of the first necessities of twentieth century industry. Therefore, like the far-sighted men they are, they are diligently scouring the world for new oil fields—only to find, almost wherever they turn, that British enterprise has been before them and that the control of all the most promising properties is in British hands. . . .

When the industry revives in Russia and Roumania, in both of which countries the affiliated Royal Dutch companies were by far the largest producers, and when the Mexican wells are free to expand to their maximum capacity, the Shell

²³ Smith, George Otis, "A Foreign Oil Supply For the United States," *Transactions American Institute of Mining and Metallurgical Engineers*, February, 1920. Advance publication No. 157.

Smith, George Otis, "Where the World Gets Its Oil," *National Geographic Magazine*, February, 1920, pp. 181-202.

²⁴ Manning, Van H., "International Aspects of the Petroleum Industry," *Transactions American Institute of Mining and Metallurgical Engineers*, February, 1920. Advance publication No. 158.

²⁵ Lane, Franklin K., Annual Report of the Secretary of the Interior for the Fiscal Year June 30, 1919, p. 18. (Republished as *United States Geological Survey Bulletin* 705.)

group will be in control of not far short of a fourth of the world's supply. . . . The Shell group owns exclusive or controlling interests in every important oil field in the world—in the United States, Russia, Mexico, the Dutch East Indies, Roumania, Egypt, Venezuela, Trinidad, India (where, in conjunction with the Burmah Oil Company, it dominates the local position), Ceylon, the Malay States, North and South China, Siam, the Straits Settlements, and the Philippines. In the past few years it has been a particularly heavy investor in American Oil properties. . . .

Our true policy, therefore, while vigilantly proving and working such resources as we possess, is to encourage investment of British capital in oil, enterprises abroad, and especially in such parts of the world as are readily accessible to seapower, and to see to it by appropriate legislation that the companies so formed remain in perpetuity under British control. In one conspicuous instance, that of the Anglo-Persian Company, the government has itself acquired a majority interest in the ordinary shares; and as the company has the exclusive right to exploit for a period of sixty years from 1901 the whole of the petroleum deposits in the Persian Empire, with the exception of the five northern provinces, and as the proved territory is now definitely known to be one of extraordinary richness—the wells already sunk have a potential production of 5,000,000 tons a year—one may take it for granted that the British hold will not be relaxed. . . . With the exception of Mexico, and, to a lesser extent, Central America, the outer world is securely barricaded against an American invasion in force. There may be small isolated sallies, but there can never be a massed attack. The British position is impregnable. All the known oil fields, all the likely or probable oil fields, outside of the United States itself, are in British hands or under British management or control, or financed by British capital. We shall have to wait a few years yet before the full advantages of the situation begin to be reaped. But that the harvest will eventually be a great one can be no matter of doubt. To the tune of many million pounds a year America before very long will have to purchase from British companies, and to pay for in dollar currency, a progressively increasing proportion of the oil she cannot do without and is no longer able to furnish from her own stores. . . .

We hold in our hands, then, the secure control

of the future of the world's oil supply. We are sitting tight on what must soon become the lion's share of a raw material indispensable to every manufacturing country, intimately bound up with maritime power, and unobtainable in sufficient quantities outside of the spheres of British influence. It will be within the limits of the commanding position that the future has in store for us to hold up the entire world to ransom in the distribution and the price of this vital essential.

After making liberal deductions for patriotic vanity and bombast on the part of the British economist who, nevertheless, adduces unpleasant circumstantial data, the case as he presents it finds support to an alarming extent in the evidence already cited.

For the information of the reader, and for comparison with the estimates and forecasts by Mr. Stebinger and myself, the following is quoted from an editorial in the *Financial News* (London) of February 24, 1920:

At the commencement of the war we believed that the effective British share of the oil resources of the world was about 2 per cent. Careful admiralty calculations recently made have shown that it is now about 56 per cent. This figure includes the Persian and Burmah resources, but takes no account of the vast South American fields commanded by the British Controlled Oil fields. The exact amount of their contribution cannot, at the moment, be estimated with anything like precision. Probably a modest estimate might put it at another 19 per cent. If that be so, our present command of the world's oil resources runs to no less than 75 per cent of their entirety.

As Secretary Lane has urgently declared, in connection with his forceful recommendations to the President and Congress,²⁶ "the situation calls for a policy prompt, determined, and looking many years ahead." This situation cannot be neglected. Longer to ignore it is to court disaster. The smug complacency that habitually blinds the

²⁶ Annual Report of the Secretary of the Interior for the year ending 1919, p. 18,

American public must be torn aside and the truth in its reality of danger faced squarely, courageously, justly, and wisely. An unprecedented crisis in our country may call for action without precedent. It is the business of the American oil companies and of

the government, working both separately and in such effective coöperation as will insure a successful outcome, to see to it that the future oil supply of America is guaranteed as fully as that of any other nation.

Have Wages Kept Pace with the Cost of Living?

By ERVILLE B. WOODS

Dartmouth College

IN attempting an answer to this question it is necessary, at the outset, to examine the terms used and the general form of the inquiry. Let us take up in order, therefore, three points of definition: "Wages," "Cost of Living," and the *period* during which it is proposed to compare the movements of the two factors.

THE MEANING OF WAGES AND THE COST OF LIVING

Wage Rates and Actual Earnings

First, with regard to wages: It is quite evident that higher wages paid in a sufficiently depreciated currency might leave the recipient poorer than before. It is nearly as obvious that high money wages in an era of high prices may confer only an illusory prosperity upon the wage earner. Here is the real point of this inquiry. We wish to ascertain whether *real* wages have been rising or falling, for in a time like the present it is unlikely that they could have remained wholly stationary. For any period during which the prices of the items for which the worker expends his income have risen more than has his money wage, we must conclude that real wages have fallen. Conversely, for any period during which the wages of the worker have risen more than has the cost of his customary budget, for such a period there has clearly been an increase in real wages.

Another phase of the definition of wages should be noticed. It concerns

the distinction between the wage rate and actual earnings. The former is stated in terms of cents per hour, dollars per week or month, or dollars or cents per unit of work performed; the pay envelope, however, contains a sum of money, the amount of which depends in part upon considerations other than the wage rate. If a machinist earned 50 cents an hour, assuming an eight hour day, and worked overtime at time and a half on week days and double time on Sundays, he might earn by working 10 hours a day, under war conditions, not merely 48 x 50 cents or \$24 a week, but, in addition, he would be paid for two hours of overtime (for which he would receive three hours pay) each week day. This would amount to 18 hours a week; if he worked 10 hours on Sunday also, he would be paid for 20 hours' work. His overtime and Sunday work would, therefore, net him 38 hours at 50¢, or \$19, in addition to the \$24 earned during regular time. His pay envelope would thus contain \$43 for a week's work.

Suppose now, that the machinist's "pay," *i.e.*, his rate, receives a rather extreme increase of 50 per cent, which advances him to 75 cents an hour, and, at the same time, the shop in which he is employed returns to its former 48-hour week. He will now find that his pay envelope contains \$36 (48 x 75 cents). This is 16 per cent less than he had been receiving. Thus, a 50 per cent increase in the wage *rate*, coupled

with a shortening of the work-day and the cutting out of the Sunday earnings, leaves him not richer in point of income, but poorer by about one-sixth.

Not only variations in the length of the working day, but also all sorts of interruptions of the worker's efforts affect his actual earnings. Sickness of the worker, or sickness in his family, lack of employment, the temporary breakdown of machinery, strikes, shortage of materials, and other causes beyond the control of the individual worker reduce earnings considerably in certain circumstances. For example, the fuel administrator's closing order in January, 1918, clipped 5 per cent from the average weekly earnings of the factory workers of New York State for that month, while in November of the same year the closing of factories on Armistice Day reduced the average weekly earnings during November between 3 per cent and 4 per cent.¹ Wage rates, therefore, considered apart from earnings, give us only an incomplete idea of the situation of the wage earner. It is equally true that earnings also present an imperfect picture in some respects. The report of the National Industrial Conference Board on *Wartime Changes in Wages* points out that "weekly earnings are less reliable in showing wage trend than are hourly earnings, since the latter are less likely to be affected by such factors as labor turnover, absenteeism and overtime."² This is true, if by "wage trend" we understand the movement up or down of the *rates* at which labor is remunerated. During periods when the

number of hours in the normal working day remain constant, the movement of rates affords a fair indication of the condition of the workers, provided the fluctuations in the amount of employment, due to other causes, are of such a sort as to cancel one another. But it is significant that a permanent shortening of the normal working week has accompanied the recent rise of prices. "The eight-hour movement has made rapid gains during the past four years," and "in the last three years the general observance of the Saturday half-holiday has reduced the 48-hour week to 44 hours."³ All comparisons, therefore, between the hourly rates of 1913 or 1914 and those of the present time must take account of a probable shortening of the working week, which operates to discount the increase in the actual weekly earnings by as much, in some occupations, as 15 per cent.

Cost of Living

Another term requires a word of explanation. The cost of living cannot be satisfactorily ascertained by a comparison of index numbers derived from the wholesale prices of commodities in general. The workman does not buy at wholesale, and he buys a particular assortment of consumers' goods and services. Let us consider for a moment the so-called family budget. The adult workman whether American or foreign-born is prospectively, if not actually, the main support of an average family, and competes in the labor market with other heads of families. Hence, it has become customary to consider

¹ See *Labor Market Bulletin* (N. Y. State Industrial Commission), December, 1919, p. 6.

² *Supra*, p. 108.

³ See *Monthly Labor Review*, November, 1919, pp. 194-95.

the wages of adult male workers from the point of view of their adequacy to support an average family consisting of wife and three children of school age. What such a family group requires, in order to live in simple comfort under American conditions, is in process of definition at the present time, and while conditions and customs vary somewhat from section to section, standards of an American standard of living are in the way of working out to a reasonably harmonious conclusion. At this point it is necessary simply to indicate the relation which exists between price movements and fluctuations in the cost of living.

Increased Prices and Family Budgets

In order to compare the cost of a given family budget at two different periods, it is necessary to use either (1) a standard list of actual goods and services which, on the average, an American family of five will require, or (2) the percentages of income which workmen ordinarily expend for the several classes of necessities entering into a family budget. In case a standardized list is available, as in the valuable study published in October, 1919, by William C. Beyer and his assistants for the Bureau of Municipal Research of Philadelphia,⁴ all that is necessary at different dates, or in different localities, is to fill in the current costs of the items enumerated, to make the comparisons, and to draw conclusions as to changes in the cost of living. As a matter of fact, most of the studies of the cost of living fail to give us completely detailed specifi-

cations regarding the expenditures of families at any level of comfort. They do tell us, however, the *proportion of income* which is expended for food, for clothing, for rent, for fuel and light, and for other major items. On the basis of such percentages it is possible to revise cost of living estimates, and bring them down to date. The following table⁵ indicates the way in which increased prices affect the cost of a family budget:

ESTIMATED PER CENT OF INCREASE IN COST OF LIVING IN THE UNITED STATES FROM 1913 TO OCTOBER, 1919

Items of Expenditure	Per Cent of Total Expenditure	Average Per Cent of Increase in Prices from 1913 to October, 1919	Per Cent of Increase as Applied to Family Budget
Food.....	38.2	80.70	30.8
Clothing.....	16.6	139.30	23.1
Housing.....	13.4	17.75	2.4
Fuel and light....	5.3	45.07	2.4
Furniture and furnishings.....	5.1	139.62	7.1
Miscellaneous....	21.3	81.31	17.3
Total.....			83.1

Translated arbitrarily into dollars, this table tells us that in a \$1,000 family budget, an estimated sum of \$382 will go for food; and, since food prices have risen 80.7 per cent this item will now cost \$308 additional. Clothing in such a budget will cost \$231 more than in 1913; rent, \$24; fuel and light, \$24, etc. Added together, these necessary additions to the cost of living total \$831. In other words, the skilled wage earner who

⁴ *Workingmen's Standard of Living in Philadelphia*, Macmillan and Co., 1919.

⁵ See "Changes in Cost of Living in the United States, 1913, to October, 1919," in *Monthly Labor Review*, January, 1920, pp. 97-98.

formerly supported his family on \$1,000 (a wage of say \$3.33 a day) will now require \$1,831 if he is to provide them with as good a living as in 1913. This is equal to a new wage of \$6.10 a day, which on this showing appears to be the 1919 equivalent of a 1913 wage of \$3.33, assuming in both cases a working year of 300 days. Similarly the smaller budget of a less skilled worker, which might have been \$600 in 1913, would (assuming for the moment the approximate accuracy of these percentages) need to be increased to \$1,098 in 1919, in order to cover the same quantity and quality of items. Such are a few of the general considerations connected with the terms *wages* and the *cost of living*.

There remains the problem of the period during which it is proposed to institute comparisons between the movements of these two factors. The recent and rapid phase of these movements began about the second half of 1915, but it is preferable to compare the last year of world peace, 1913, with the present, so far as it is possible to do so. The changes from 1913 to 1915 are so slight that the differing dates used in various investigations within this period do not create serious difficulties.

A point, sometimes overlooked, concerns the movement of prices and of wages during the decade and a half preceding the war. It will be recalled that the prices of the period of the Spanish-American War (the closing years of the last century) had been left behind long before the beginning of the recent sharper increases. Some attention, therefore, should be paid to this longer period stretching back to the end of the nineties.

POSITION OF THE WAGE EARNER IN 1913

A number of careful studies published about the beginning of the war appear to agree in the general conclusion that during the opening decade and a half of the present century, the actual purchasing power of American wages had been declining. Lauck and Sydenstricker⁶ conclude that full-time weekly wages increased, on the average, between 25 and 30 per cent during the period from 1900 to 1915, but the cost of maintaining a family in 1913 without change of standard was 35 per cent greater than in 1900. W. I. King,⁷ writing of the effect of continued heavy immigration upon real wages during the decade 1900 to 1910, expresses the following view: "The evidence, then, indicates that all the entrenchments of organized labor, all the legislation in favor of the working class, all of our new inventions have failed to prevent the invaders from forcing down the commodity wages of American labor." In another passage we read: "From 1865 to 1896, the general trend of real wages was very steadily toward higher levels, except for temporary backsets. After 1896, the progress upward ceased and, since 1906, there are some suspicious indications of a general decline. The important feature is that the ascent has been checked, and that, right in the face of the greatest industrial development that the world has ever seen."⁸ Streightoff,⁹ also, calls

⁶ Lauck and Sydenstricker, *Conditions of Labor in American Industries*, 1917, pp. 378 ff.

⁷ King, W. I., *The Wealth and Income of the People of the United States*, 1915, p. 179.

⁸ Supra, p. 193.

⁹ *The Standard of Living Among the Industrial People of America*, 1911, p. 48.

attention to the fact that the "retail prices of food are advancing so rapidly that, for the last decade, there has been no gain in the real wages of persons employed in manufacture." The reference is to the ten years ending in 1907.

H. P. Fairchild in a study entitled *The Standard of Living—Up or Down?*¹⁰ is apparently in accord with the authors already cited: "The writer is well aware that the foregoing data do not prove that the common laborer's family was better off in 1890 than in 1908. . . . But he does believe that they furnish very strong evidence in support of that proposition." I. M. Rubinow,¹¹ writing in 1914, goes even farther: After an exhaustive examination of the wage and retail price data of the Department of Labor, he arrives at the conclusion that between 1890 and 1912, real wages ("purchasing power measured by retail prices of food"), on the basis of weekly earnings, fell in the ratio of 99.4 to 85.3, the average of 1890-99 being rated 100. Retail food prices constitute only one of the items in a family budget, yet inasmuch as it is the largest single item, namely, about 40 per cent of the total, these results have a certain amount of significance. His conclusions are in general agreement with those of other writers cited above. He finds that "in years of falling or even slowly rising prices, the American wage worker was able to hold his own or to improve his condition to a slight extent. But when confronted with a rapidly rising price movement . . . the

American wage worker . . . has been losing surely and not even slowly, so that the sum total of economic progress of this country for the last quarter of a century appears to be a loss of from 10 to 15 per cent in his earning power."¹² He contends further that a positive drop in the standard of living has been prevented only by "(1) smaller families, (2) rapid development of woman labor, (3) increase in employment of married women." Parmelee¹³ agrees with this conclusion which he says "may seem startling and hard to believe, yet it is corroborated by the results of other investigations of the same question."

If we consider only the years of the present century, therefore, we are probably justified in concluding that the American worker found himself, at the outbreak of the World War, handicapped by a slight but unmistakable decline in the purchasing power of his wages. They sufficed to buy somewhat less than had the wages of the year 1900.

EXTENT OF THE RECENT INCREASE IN THE COST OF LIVING

Reference has already been made to the estimate of the Bureau of Labor Statistics concerning the percentage increase in the cost of a weighted list of items comprising a family budget. It will be recalled that the increase from 1913 to October, 1919, figured out at 83.1 per cent. All of these items, however, except the food prices, were derived from wholesale price index numbers¹⁴ and are in so far

¹⁰ *American Economic Review*, 1916, pp. 9-25.

¹¹ "The Recent Trend of Real Wages," in *The American Economic Review*, December, 1914, p. 793.

¹² *Ibid.*, p. 813.

¹³ *Poverty and Social Progress*, 1916, p. 363.

¹⁴ See *Monthly Labor Review*, January, 1920, p. 97.

unsatisfactory, yet, on the whole, it is probable that this calculation presents a substantially accurate picture of recent changes. It does not differ greatly from certain other estimates with which comparison is possible. Thus the estimate of the National Industrial Conference Board¹⁵ of 73 per cent is for a slightly shorter period, July, 1914, to July, 1919; it has been pointed out, moreover, that "the study made by the National Industrial Conference Board was carefully done, but, with the exception of food prices, most of the prices and rent data were gathered solely by correspondence with clothing stores, real estate dealers, etc., and it is believed that any error resulting from this method of collecting data would be on the side of unduly conservative quotations."¹⁶

Cost of Living in Washington, D. C.

Several local studies of much value should be noted in this connection. The cost of living in the District of Columbia has been made the subject of an investigation by the United States Bureau of Labor Statistics,¹⁷ which led to the conclusion that from 1913 to November, 1919, the percentage of increase was 88.4 per cent. This is a study based upon the percentage of income paid out for the several items of expenditure, and apparently involved the collection, locally, of retail prices for these items, although the account is not entirely specific upon this point. Rent increased in the District only 3.4 per

cent during the entire period, so that this item cannot be held accountable for the high total increase found. No doubt, conditions in the capital city are unrepresentative in other respects, due to the relatively high average income of the white population of the city.

Cost of Living in Philadelphia

The investigation of the cost of living undertaken in Philadelphia, under the auspices of the Bureau of Municipal Research, throws some light upon the rising cost of the family budget. The authors of this report conclude that a budget which had cost in Philadelphia \$1,069.94 in 1913-14 could be purchased in the autumn of 1918 for \$1,751.¹⁸ This is the equivalent of a 64 per cent increase, and runs fairly close to the estimates of the Bureau of Labor Statistics for the same period. For from July, 1914, until June, 1918, the latter's figures show an increase of 56 per cent, and from July, 1914, until December, 1918, an increase of 72 per cent.¹⁹ The Philadelphia increase up to the "autumn" of 1918 is midway between the Bureau of Labor Statistics estimates for June and for December of that year.

Cost of Living in Peoria, Ill.

Another local investigation of much interest is that of the Holt Manufacturing Company of Peoria, Ill. This was carried out as a preliminary to a general revision of wage rates, in

¹⁵ *Research Report*, Number 19, "Changes in the Cost of Living," p. 25.

¹⁶ Hanna, Hugh S., in the *Monthly Labor Review*, October, 1919.

¹⁷ See *Monthly Labor Review*, January, 1919, pp. 98-99.

¹⁸ *Workingmen's Standard of Living in Philadelphia*, a Report by the Bureau of Municipal Research of Philadelphia, William C. Beyer, in charge, 1919, p. 7.

¹⁹ Hanna, Hugh S., in the *Monthly Labor Review*, October, 1919, p. 8.

accordance with the increased cost of living. The method employed in this study and the results obtained are described by Messrs. Williams and Holt under the title "The Cost of Living in Relation to Wage Adjustments" in the *Bulletin of the Taylor Society* for October, 1919. The prices of foods, clothing, fuel, shelter, etc., were ascertained from local retail dealers under conditions of personal knowledge on the part of the investigators who thus kept close to their facts; this should ensure a high degree of accuracy in the results obtained. In summarizing the cost of living phase of the investigation, the authors find as follows: "Combining the four principal essentials of cost of living, that is, food, clothing, fuel and shelter, we found the total daily cost of living for the years 1913, 1915, 1917, 1918 and 1919. The result was that the same articles, used in the same quantities by the standard family of five throughout those years, could be purchased in 1913 for \$4.06, whereas in May, 1919, those same articles would cost \$7.39, an increase of 81.6 per cent in daily living cost from the base year, 1913, to May, 1919."

This result has the advantage of being derived wholly from carefully weighted *retail* prices, not only for the several food items, but for all the items entering into its composition. It has also the advantage of being based upon data obtained on the ground, rather than by the less satisfactory method of questionnaires sent by correspondence to dealers in distant localities. It was worked out, moreover, in close collaboration with the consumers—employees of the company—whose assistance was invoked

as needed by the investigators. From May, 1919, to October, 1919, retail food prices in the United States increased about 1.6 per cent; it is probable, therefore, that if this study were brought down to October, 1919 (the date of the Bureau of Labor Statistics index number of 83.1 mentioned above), it would be necessary to increase very slightly the Peoria index number. It chances that as the two index numbers stand, there is a difference of only 1.5 points between them. In spite of the fact that the Peoria index number is a purely local one, it is believed that it is not too unrepresentative of the country generally. The increase in rentals, an item differing from city to city as much as any of the constituents in a family budget, amounted to 24.3 per cent in Peoria. Assuming that housing costs 13.4 per cent of the total expenditure, as explained above, we would have an increase in the cost of the Peoria budget attributable to rent of 3.25 per cent. The increase due to housing in the Bureau of Labor index number was 2.4 per cent. The correction, therefore, for exceptional housing conditions in Peoria would appear to be less than 1 per cent.

In view of the foregoing considerations, it would appear that 83 per cent is not an excessive estimate for the increased cost of living between the year 1913 and the late autumn of 1919. Since then, the cost of the 22 articles in the Bureau of Labor Statistics retail price list has increased from the index number 188 for October, 1919, to 201, for January, 1920, or 7 per cent.²⁰ During the past six years

²⁰ Press releases, U. S. Bureau of Labor Statistics.

the aggregate percentage increase in the cost of food at retail has about equalled the percentage increase in the cost of the budget generally. It is not improbable, therefore, that the 7 per cent increase in the retail price of food between October last and January of this year reflected an increase in the cost of living, generally, of about that amount.

EXTENT OF THE RECENT RISE IN WAGES

As stated above, wage statistics consist partly of wage rates and partly of actual earnings. There is available a certain amount of material of both sorts. In comparison with the cost of living data, that bearing upon wages is complicated in the extreme due to the extraordinary differences in the extent to which workers in the several industries and in the various occupations within these industries have received increased wages. Hanna and Lauck in January, 1918,²¹ pointed out many of these discrepancies. The following items will illustrate this point; they are taken from a table setting forth relative wages in leading occupations, December, 1917, over 1914-15, rates for 1914-15 being 100:

Compositors and Linotype operators (newspapers, day).....	106
Hodcarriers (plaster tending).....	112
Mining (anthracite).....	118
Silk industry (earnings).....	140
Common labor (iron and steel).....	160
Woolen manufacturing (earnings).....	170
Blacksmiths (Ship Yards, Delaware River).....	205

The war, it is evident, brought increased pay to labor in greatly differing degrees. The fact of this uneven-

²¹ *Wages and the War*. See especially pages 3-11; the figures quoted above are taken from page 6.

ness from calling to calling makes generalizations about wage increases take on a certain aspect of unreality, for, while the "average worker" may have had his pay raised, say 80 per cent for the sake of illustration, the millions of concrete individuals behind the shadowy average have received either more or less, perhaps very much more or very much less, of an increase.

This uneven participation in rising wages is apparent even as among entire industries, as the following index numbers for eight leading industries clearly reveal.²²

RELATIVE EARNINGS PER HOUR IN SPECIFIED INDUSTRIES INDEX NUMBERS FOR SPRING, 1919; 1913=100

Hosiery and underwear.....	184
Silk goods.....	191
Clothing, men's.....	171
Lumber (sawmills only).....	194
Mill work (sash, doors, etc.).....	151
Furniture.....	154
Cigars.....	152
Iron and steel.....	221

The bureau states that the cost of living index number most nearly comparable with these wage index numbers is 175; this being the case, it will be noted that four of these industries show wage increases greater than that in the cost of living, while four show increases smaller than that in the cost of living. These figures tell us nothing about weekly or annual earnings.

Computed on the same basis (1913=100) the wages of farm labor had already in 1918, reached points ranging from 155 to 178, according to which of several different methods of hiring were employed.²³ This corresponds

²² See *Monthly Labor Review*, November, 1919, p. 191-93, and January, 1920, pp. 140-41.

²³ *Monthly Labor Review*, November, 1919, pp. 193-94.

roughly to the advance registered by the cost of living up to that time, which reached an index number of 158 in June, 1918, and 174 in December of the same year.²⁴ Data for 1919, unfortunately, are not yet available. Railway wages also appear to be keeping up with the higher costs; from the year ending June 30, 1915, to July, 1919, the average hourly compensation of the numerous classifications of railway labor which are paid by the day increased 97 per cent. We are told, however, that owing to the introduction of the eight-hour day, the railroad employe did not receive an actual increase in his earnings such as this percentage of increase in rates would indicate.²⁵ The wage rates of anthracite miners, on the other hand, appear to have risen but 50 per cent between 1913 and 1919, while the rates of bituminous pick miners in the basing district of the central competitive field, rose but 35 per cent, during the same period when the cost of living increased about 77 per cent.²⁶ Probably the most complete and most useful collection of authoritative wage statistics bearing upon the period of the war is that published by the Bureau of Applied Economics, at Washington, entitled *Wages in Various Industries—A Summary of Wage Movements During the War*. The following data relative to union rates in the building trades are taken from this source (page 13):

PER CENT INCREASE OF HOURLY RATES IN
VARIOUS CITIES, 1914-19

Bricklayers.....	30.9
Carpenters.....	53.9

²⁴ Supra, November, 1919, pp. 193.

²⁵ Supra, December, 1919, pp. 229-30.

²⁶ Supra, December, 1919, pp. 225-26.

Cement workers and finishers.....	36.8
Inside wiremen.....	51.4
Painters.....	60.8
Plasterers.....	32.2
Plumbers.....	50.0
Sheet metal workers.....	56.2
Steam fitters.....	51.6
Structural iron workers.....	51.7

The increase in the cost of living during this period was a little over 70 per cent.

A very valuable study of *Wartime Changes in Wages* is that prepared by the National Industrial Conference Board. Not only relative hourly but also weekly earnings are given for eight leading industries. The figures are for a single weekly payroll period only in each year, but comprise establishments employing in the neighborhood of 150,000 workers. The weeks selected were generally the third week in September for the years 1914 to 1918, and the first week in March, 1919.²⁷ Assuming the weekly earnings in September, 1914, to be 100, those of March, 1919, were found to be as follows for male workers only:

Metal manufacturing industries.....	188
Cotton manufacturing industry.....	171
Wool manufacturing industry.....	162
Silk manufacturing industry.....	193
Boot and shoe industry.....	176
Paper manufacturing industry.....	176
Rubber manufacturing industry.....	210
Chemical manufacturing industry.....	204

(The index numbers for *hourly* earnings differ from the above figures materially; they average about 10 points higher.)

The cost of living index which the report regards as comparable with these wage figures, namely, the board's index number for March, 1919, was

²⁷ National Industrial Conference Board, *Research Report Number 20*, p. 1.

161.3.²⁸ The index number of the Bureau of Labor Statistics, for this date, however, based on September, 1914, would be 172.²⁹ Therefore, in March, 1919, weekly earnings in these establishments were, in most cases, abreast or well in advance of the cost of living. In general, these figures present a somewhat more favorable picture of the wage earner's position than do those of the Bureau of Labor Statistics for October, 1919, referred to above.

Another series of relative wages can be computed from the payroll data gathered by the Bureau of Labor Statistics, and published under the title *Employment in Selected Industries*. Thus, by dividing the total payroll disbursement in a given industry on a certain date by the total number of workers employed at that date, it is possible to arrive at a sort of average of earnings, which can be compared in one year with the corresponding item in a later year. In the plants comprised in the list below there were employed in October, 1915, some 429,000 persons, and in April, 1919, although the establishments reporting were not wholly identical, there were 453,000 persons. Taking the average earnings calculated in this way for October, 1915, as 100, the relative earnings in April, 1919, were as follows:³⁰

Cigar manufacturing.....	149
Hosiery and underwear.....	152
Silk.....	153
Boots and shoes.....	156
Cotton finishing.....	169

²⁸ Supra, pp. 100-101.

²⁹ See *Monthly Labor Review*, November, 1919, p. 193.

³⁰ See *Monthly Labor Review*, December, 1916, p. 9 and June, 1919, p. 125.

Men's ready made clothing.....	183
Car building and repairing.....	186
Cotton manufacturing.....	189
Iron and steel.....	193
Woolen industry.....	206

During the same period the cost of living reached 169, assuming October, 1915, as equal to 100. Of the ten industries, therefore, four lagged behind the cost of living, one had average earnings just abreast of it, and five exceeded it in the extent of their wage increases.

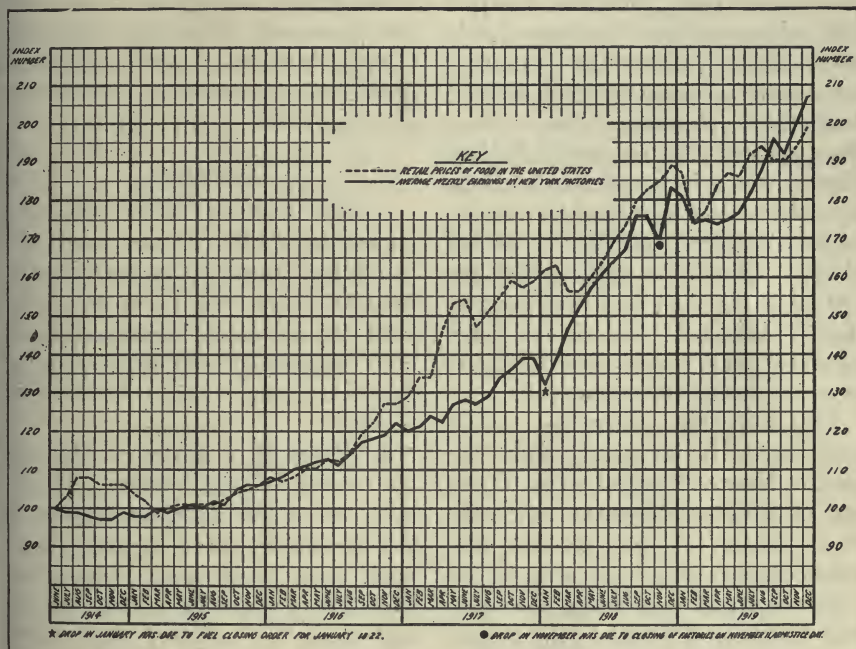
If this series of comparisons is continued to November, 1919, the last month for which figures are now available, a considerable further increase in earnings appears in all of these industries; in fact, the boot and shoe industry seems to be the only one in which earnings were not well in advance of the cost of living at the end of the stretch from October, 1915, to November, 1919.

The studies on which the last three series of relative wages are based differ at so many points, particularly as to the selection of establishments in the several industries, that no great amount of agreement is to be expected. If, however, all of the recent data thus far cited on the subject of wages were assembled in a single descriptive chart or table, this much at least would appear: the metal manufacturing industries, chemicals, rubber, lumber, and possibly railway labor have received wage increases greater than that in the cost of living; the anthracite and bituminous coal miners, on the other hand, and the millwork and furniture industries and building trades have fallen behind the movement of the cost of living, while as to the remaining industries there is, for

the most part, a lack of agreement between the several series of relative wages, and therefore more or less uncertainty as to whether they are running ahead or behind the cost of living; all of which reinforces the point that it is difficult to make that nebulous and elusive personage—the average man—stand up and speak

is the valuable table of average weekly earnings in New York State factories published in the *Labor Market Bulletin* of the New York State Industrial Commission Bureau of Statistics and Information. These figures are derived from reports received from over 1,600 firms with over 600,000 employes and represent 55 industries,

COMPARISON OF COURSE OF AVERAGE WEEKLY EARNINGS IN NEW YORK STATE FACTORIES WITH COURSE OF RETAIL FOOD PRICES IN THE UNITED STATES



clearly about his economic situation. If we should descend from industries to particular occupations we would find a similar lack of simplicity and uniformity. Let us therefore travel in the opposite direction and take a glance in conclusion at some mass data in which even industrial lines are disregarded.

The only set of figures now available which comes down to the close of 1919

arranged in 11 groups. The accompanying chart which is reproduced from page 6 of the December issue presents not only the movement of weekly earnings but also the retail prices of foods, as published by the United States Bureau of Labor Statistics.

It will be recalled that during the period when the cost of living, as represented by the weighted items of a

family budget, was increasing 83 per cent, the cost of food—the largest single item in the budget—increased 80.7 per cent. It is apparent, in these circumstances, that the curve for retail food prices possesses a considerable significance as reflecting the upward trend of living costs generally. During January, 1920, the upward movement of wages slackened, the increase for the month being less than 1 per cent, while the trend of food prices continued unchanged; this means that in January the two curves were again approaching each other.³¹ Apparently, therefore, after a long chase marked by a number of distinct phases, which it is not possible here to analyze, the earnings of the factory workers of New York State in the fall of 1919 had again caught up with the cost of living, and had continued to slightly exceed it (in terms of index numbers) for a longer period than at any time during the course of the war.

The foregoing discussion throws some light, it is hoped, upon the relative level or levels of wages at the end of 1919 in comparison with the years before the war; it does not, unfortunately, afford any clue to the more important problem of the absolute adequacy of wages to the normal requirements of the worker and his family. The problem of defining a living wage is as insistently present at the end of the war as it was at its beginning.

Closely related to this question of adequate minimum standards is the still more difficult task of determining what distributive justice requires in the matter of wage payments. To

this end there is need of a careful examination of the movement of profits during the past twenty years, running parallel with the inquiry concerning real wages. Sound conclusions on the subject of wages can be reached only after adequate answers have been made to three questions: (1) How high *are* real wages? (2) How high *should* a minimum comfort wage be? (3) Have wages exceeded, fallen behind or kept even pace with the movement of profits during the period of industrial consolidation which began some twenty or twenty-five years ago?

SUMMARY

1. The cost of living advanced approximately 83 per cent from 1913 to the late autumn (October) of 1919; from October, 1919, up to February, 1920, the movement continued apparently unchecked, the retail price of food increasing 7 per cent in three months.

2. Wages have advanced throughout the field of employment. Occupations which felt least the impulse of war prosperity have lagged behind, while other occupations or industries which were urgently needed to arm and equip our military forces prospered out of proportion to the rising cost of living.

3. The rise of wage rates has been accompanied by a permanent shortening of the working week. In consequence of this change the full-time *weekly* wage in 1920 does not exceed that of 1913 by as much as the *hourly* wage of 1920 exceeds that of 1913.

4. Between 1900 and the beginning of the World War, real wages declined slightly in the United States, with the

³¹ Press releases, New York State Industrial Commission.

result that the position of the American industrial worker was rather worse in 1914 than it had been in 1900.

5. After the outbreak of the war there was a further shrinkage in real wages, especially during 1917 and 1918 (see the New York chart). In the fall of 1919, weekly earnings overtook the retail price of food. At the beginning of 1920 real wages appear, on the average, to have risen to their 1914 level, and it is not impossible that the slight loss sustained between 1900 and 1914 will also be retrieved.

6. This result is being achieved in a period of full employment and insistent labor demand; any widespread falling off in the amount of employment

offered to labor during the continuance of present prices would necessarily result in a decline in real wages and in the standard of living.

7. In conclusion, it may be said that American labor has prospered during the past five years in a negative sense, in that, in spite of high prices, it emerged at the end of 1919 no worse off, on the average, than before; and on the positive side, labor has gained a shorter work day, fuller recognition, and in common with the rest of the population, it has inherited a world which is in many respects, *e.g.* public health, recreation, etc., a better place to live in than was that of 1890 or of 1900.

The Course of Profits During the War

By BRUCE D. MUDGETT

University of Minnesota

THE counterpart of the cost of living indexes used in so many cases during the war to settle conflicts over wages is an index of profits; for the motive behind wage demands was only in part a matter of rising price levels and rising consumer costs; it was equally a belief on the part of the wage earner that the *relative* share of capital or management in the national product was increasing, that business men and business firms were receiving vast profits from their war production. In this day of appeal to facts the only way of meeting such a belief and satisfying the demand that goes with it lies in the application of scientific methods to the measurement of the phenomenon in question.

When it comes, however, to the matter of constructing an index of profits the task is far from simple; it is by no means as satisfactory as the determination of an index number of prices, for it involves an immediate appeal to industrial accounting systems and the prerequisite to thoroughly satisfactory results is uniform accounting methods. The uniformity of our railroad accounting systems, established after a generation of legislative and administrative struggle, offers a marked contrast to accounting in other fields of privately owned and operated industry.

It is possibly a safe forecast of the near future to assume that the interest

of the public in profits will increase rather than decrease. The deep interest which the public has shown and is showing in such fundamental industries as coal production may well lead to a greater measure of public control and to a demand for more uniform methods of accounting. The changes in accounting methods by industrial concerns since the passage of the income tax law has been little short of phenomenal.

RATE OF PROFITS PROBLEM

Were it possible to obtain data which at the present time is confidential, the problem of the rate of profits could best be studied from the income tax returns in the office of the Collector of Internal Revenue; for here, the accounting difficulties of the problem have been dealt with and a rate of profit ascertained as a basis for the imposition of the tax. It is recognized even here, however, that uniform results cannot be obtained for all business units; the valuation of assets, for instance, is fundamental to the determination of capital invested and thereby of rate of earnings; but capitalization in some cases represents no water, in some cases more or less water. The proper method of reflecting the influence of changing price levels on the valuation of assets remains an insuperable difficulty and certain it is that there is little uniformity in the methods of dealing with this problem. So after all, there is

Note—Mr. C. E. Olson and Mr. F. E. Ringham assisted materially in the preparation of the tables included in this study.

a great deal that is arbitrary in the governmental method of arriving at a rate of earnings. This arbitrariness is not removed by the power of the Federal Bureau to compel the giving of information.

While an index number of profits for all industries or for groups of related industries might therefore be constructed, it would have a large degree of untrustworthiness because of the lack of homogeneity of the data from which it was constructed. For this reason, the method of this brief study will be to construct an index number of profits for particular corporations and to make no attempt to combine them into a general industry index. By this means, it is believed, the difficulties due to lack of comparability of data will be reduced to the minimum at present possible for an individual investigator, since it will be confined to lack of comparability of the data of a particular corporation at different periods of time and will not involve comparisons between corporations.

Relation of Profits to Wages

The problem involves no judgment as to the justification of earnings, as to whether a particular level is too high or too low, but specifically the question whether over a period of time profits have changed *relatively* to wages, that is, whether they were higher or lower at one time than at another. The issue which brings this matter forward is, of course, the question whether profits have risen more rapidly than wages during the war; or, otherwise stated, whether the *relative* share of the business man or capitalist, as opposed to that of the wage earner, in the

national dividend is greater or less than in pre-war years. The data given below deals with only one side of this problem—the profits side. No attempt is made to construct wage indices or even to quote available ones but indices of profits for particular corporations are constructed and their reliability considered.

In attempting to obtain statistical evidence on this problem it is necessary at once to rule out a considerable share of the field of business enterprise; for only those business units can be studied which publish adequate accounts for the period of years covered by the study. Thus wholesale and retail business, a very important factor, must be left out; the coal companies, producing one of the fundamental necessities of our national life, must be left out, in spite of the fact that Mr. McAdoo's recent remark has made us all want to pry into the secrets of their income accounts. The railroads are omitted, of course, because they were not operated during the period of our own belligerency as private enterprises. The study is confined, therefore, to corporations which list their securities on the various stock exchanges of the country, and for that reason publish fairly complete statements of assets and income. The securities of most of the corporations selected are known to be listed on the New York Stock Exchange, although the list has not been checked to ascertain if all are so listed. The selections were made from a list of about one hundred and fifty corporations published in an investment bulletin in the writer's possession and, with the exception of "rails," includes every corporation listed concerning which

the facts as to investment and earnings could be obtained for the years 1910, or 1911 to 1918 from Poor's or Moody's Manuals. The manuals containing data for the year 1919 were not available. This test ruled out companies organized or reorganized since 1910, and a few in which the accounting methods, or at least the published accounts had changed to such an extent that the figures for various years were not comparable.

Earnings and Investments

The difficult problem in forming an index of corporation earnings is to determine what constitutes "earnings" and what constitutes "investment." Following the procedure of the Federal Internal Revenue office, the method here used has considered that the investment of the owners (stockholders) comprise that portion of the total assets which are not held as definite obligations against the stockholders. Speaking broadly, this includes the stock capital and the surplus. The management of reserves, however, has an important bearing on surplus. The "reserves" shown in balance sheets are in some cases clearly a part of the surplus representing the investment of the owners; in other cases it has been difficult to say what their nature is. Where it was clearly evident that certain reserves represented part of the equity of the owners as, for instance, "reserves for additions and betterments," they have been included in the item "invested capital."

Depreciation Reserves

There is another difficulty in dealing with reserves and that is consistency

in making proper reserve deductions. It might be hoped that in the very important matter of depreciation reserves and of ore depletion reserves in mining companies, a corporation would pursue a consistent policy over the period studied. But that this has not been the case is only too evident. Depreciation is a physical fact and operates continuously, but the general policy seems to have been to write off asset depreciation very sparingly, if at all, in lean years and very generously in years of high profit. This cannot help but introduce an element of unreliability in the figure representing investment.

Valuation of Assets

Another difficulty in determining capital invested occurs in the matter of valuing assets. This would be a most serious matter if the attempt were made to combine results for various corporations into a general profits index, and was one of the main considerations in the decision not to construct a general index. But it offers difficulties even with a single corporation. The stock capitalization of a concern may at one time be greatly watered, as was the case when the Steel Corporation was organized, whereas at a later period there may be tangible assets back of every dollar of capitalization. In one or two cases good will or patents have been given a large value in early years and later shown in the balance valued at one dollar. These considerations incline one to the belief that any index of profits may have too wide an element of error to be used with safety and to decide that the time is not yet come for a statistical determination of the

question. These difficulties, however, lie in the original data, not in the method of constructing an index, and if the index is necessary to settle problems of large public import, its use will bring forth a refinement of the data on which it is based.

The profits ratio has been determined by taking the percentage of "earnings applicable for dividends" to the invested capital. The former is not much more easily determined than the latter. "Earnings applicable for dividends" is theoretically the net income after deduction of operating expenses, fixed charges and such reserves as ore depletion, depreciation, repairs, replacements, etc. But here again these latter charges have been small or entirely absent in poor years and have been made, in some cases, in great abundance in such prosperous years as 1917. Failing to show proper depreciation reserves in the balance sheet tends to increase the book value of "invested capital" and therefore to decrease the profit per cent for that year; failure to deduct such reserves from "income available for dividends"

has the opposite effect and in far greater proportion.

In calculating the percentage of earnings to invested capital for each year these difficulties have been recognized, and they cast sufficient doubt on the yearly percentages obtained to make certain that no fine distinctions can be drawn from them. It is probable that as a general indication of the direction of profits and of the approximate changes in profit levels during the war, they are reliable.

While space limitations forbid the publication of all the data from which the yearly profit percentages of the various corporations have been calculated, the work sheet for the United States Steel Corporation is here included as an illustration of the method employed. Since the Steel Corporation produces about 50 per cent of the iron and steel output of the country, its percentages are in themselves a fairly representative index of profits in the iron and steel industry.

The calculations were made mostly on a slide rule and are probably accurate to one-tenth of one per cent.

UNITED STATES STEEL CORPORATION

Fiscal Year Ended Dec. 31	Stock Capitalization ^a	Surplus ^b	Total Invested Capital	Earnings Applicable for Dividends	Ratio Year's Earnings to Capital Invested at Beginning of Year
1909	\$868,583,600	\$130,401,396	\$998,984,996	....	....%
1910	868,583,600	165,641,908	1,034,225,508	\$87,407,185	8.7%
1911	868,583,600	173,691,195	1,042,274,795	55,300,297	5.3%
1912	868,583,600	176,716,245	1,045,299,845	54,240,049	5.2%
1913	868,583,600	213,152,210 ^c	1,081,735,810	81,216,986	7.8%
1914	868,583,600	190,204,472	1,058,788,072	23,496,768	2.2%
1915	868,583,600	235,025,329	1,103,608,929	75,833,833	7.2%
1916	868,583,600	436,360,913	1,304,944,513	271,531,730	24.6%
1917	868,583,600	541,660,804	1,400,244,404	224,219,565	17.2%
1918	....	....	....	137,532,377	9.8%

^a Does not include stocks of subsidiary companies not owned (approximately \$600,000).

^b Includes investments in property account additions and construction.

^c Includes Gary plant special construction fund, \$6,353,781.

For the purpose of obtaining summary figures for comparing pre-war and war-time profits the yearly profit percentages for the corporations included in the study were combined in the following manner: (1) a normal pre-war period; (2) the period of the entire war; the latter was then divided into two sub-periods with United States (3) as a neutral and (4) as a belligerent. The danger of using a single year as representative of normal pre-war conditions led to the decision to average the results of the four years preceding the outbreak of the European conflict. In a few cases where data were available only for the last three years preceding the war, these three years were used. All such cases have been marked in the tables. Another variation occurs in the case of corporations, the fiscal years for which end on dates other than December 31. Where the fiscal year ended on June 30, July 31, or August 31, the four pre-war years included the period from that date in 1910 to the same in 1914. In the majority of instances the pre-war period covers only to December 13, 1913. For a few cases data for 1918 were not available and period four, therefore, covers one year only; period two, in this case, covering four years.

The method of averaging the yearly percentages produces the same result, usually to one-tenth of one per cent, as the theoretically more correct method of dividing the sum of the earnings for the period by the sum of the yearly amounts of capital invested. The reason for the close correspondence in the results is due, of course, to the slight change from year to year in the denominator of the

ratio. In some dozen cases in which period ratios were calculated by both the longer and the shorter methods the results agreed within the limits stated above.

The resulting percentages of earnings for each of the four periods for each corporation are grouped together in broad industry groups as follows:

1. Steels and equipments
2. Metals
3. Motors and rubbers
4. Sugars, Leathers and Oils
5. Public utilities
6. Food products and chemicals
7. Miscellaneous

This grouping furnishes a rough indication of what might be desirable if the results were to be combined into general indices for particular industries or a single index for all industries.

SUMMARY OF CONCLUSIONS

Certain conclusions incidental to the chief purpose of this study force themselves upon one's attention. They are, in the main, that the source material for an index of profits is extremely unsatisfactory, due both to lack of uniformity in accounting methods and to the inadequate or scientifically incorrect method of dealing with reserves. The income tax law, however, has produced a very excellent effect in clarifying the balance sheets and income statements of many corporations since 1913.

The final summaries for the various corporations shown in the tables following permit certain general conclusions in support of what has been a matter of general observation. The iron and steel industry shows a very large increase in the rate of profit

STEELS AND EQUIPMENTS

	U. S. Steel	Gloss Sheffield*	Lackawanna Steel	Crucible Steel	Bethlehem Steel	Republic Iron and Steel ^a	Railway Steel and Spring	Pressed Steel Car	American Locomotive	New York Air Brake	Westinghouse Air Brake
Pre-war period.	6.8	3.0	4.3	5.6 ^d	7.1	4.3	4.6	4.4	5.7	5.4 ^c	17.3 ^b
Total War period.	12.2	6.5	14.9	15.7	32.5	12.8	8.6	6.0	8.8	23.4	24.4
U. S. Neutral period.	11.3	4.8	10.2	14.9	41.7	10.7	5.8	4.9	8.9	31.3	21.2
U. S. Belligerent period.	13.5	9.1	22.0	18.1 ^d	18.7	16.0	12.9	8.6	8.5	11.5 ^c	34.1 ^b

Relatives

	100	100	100	100	100	100	100	100	100	100	100
Pre-war period.	100	100	100	100	100	100	100	100	100	100	100
Total War period.	179	216	346	280	457	297	187	136	154	433	141
U. S. Neutral period.	166	160	237	266	587	249	126	111	156	580	123
U. S. Belligerent period.	198	303	511	323	263	372	280	195	149	213	197

^a Fiscal years 1910-12 ended June 30; 1913 and thereafter ended December 31; pre-war period includes fiscal years 1910, 1911, 1912, 1913.

^b Fiscal year ended July 31; pre-war period therefore fiscal years end 1911 to 1914; period No. 4 (U. S. Belligerent) covers 11 months ending December 31, 1918.

^c Fiscal year ends June 30; pre-war period fiscal years ending 1911 to 1914; fourth period covers fiscal year 1918 only.

^d Fiscal year ended August 31; pre-war period covers four fiscal years to August, 1914; fourth period includes only fiscal year 1918.

* Fiscal years ended November 30 till 1917.

during the war and with few exceptions a greater rate while the United States was actively involved than while we were neutral. Metals had much the same history but apparently saw their most prosperous time during our period of neutrality.

The motor and leather relatives are significant because of the unusually high levels they reached during the

war; the public utilities equally significant for the very general decreases in their profit levels.

Food products, chemicals, sugars and the miscellaneous group show fairly wide variations but in most cases very large increases.¹

¹ The comparisons of general price levels in different countries can be made by turning to the article on page 13 by Liefur Magnusson.

METALS

	Anaconda Cop- per	Colorado Fuel and Iron	Utah Copper	U. S. Smelting, Refining & Mfg.	American Smelt- ing and Refining
Pre-war period	10.4*	2.5 ^a	31.7	7.2	7.2
Total War period	18.4	5.2	44.2	9.3	9.8 ^b
U. S. Neutral period	19.9	4.8	51.1	10.7	9.4
U. S. Belligerent period	16.2	6.2 ^a	33.9	7.2	11.0 ^b

Relatives

	100	100	100	100	100
Pre-war period	100	100	100	100	100
Total War period	177	208	139	129	136
U. S. Neutral period	191	192	161	149	131
U. S. Belligerent period	156	248	107	100	153

^a Fiscal years ended June 30, until 1918; therefore, pre-war period fiscal years ending 1911 to 1914; data for fourth period covers only calendar year 1918.

^b Total war period covers only four years; United States belligerent period covers only 1917.

* Pre-war period three years, 1911-13.

MOTORS AND RUBBERS

	General Motor Co. ^a	B. F. Goodrich Company	Studebaker Corp.	U. S. Rubber Company	Willys Overland Co.
Pre-war period	16.4	3.0 ^b	4.9	6.6 ^c	18.6 ^d
Total War period	38.0	10.4	11.6	8.5	18.0
U. S. Neutral period	42.5	9.4	15.1	6.7	25.3
U. S. Belligerent period	31.2	11.9	6.3	11.1	7.0

Relatives

	100	100	100	100	100
Pre-war period	100	100	100	100	100
Total War period	231	333	236	129	97
U. S. Neutral period	259	313	308	101	136
U. S. Belligerent period	190	397	129	168	38

^a End of fiscal year changed in 1917 from July 31 to December 31.

^b Pre-war average based on only one year ending December 31, 1913.

^c End of fiscal year changed in 1913 from March 31 to December 31.

^d Pre-war average based on one year only, ending June 30, 1914; end of fiscal year changed in 1914 from June 30 to December 31.

SUGARS, LEATHERS AND OILS

	<i>Sugars</i> American Sugar	American Beet	Cuban American Sugar	<i>Leathers</i> American Hide and Leather Co.	Central Leather Co.	<i>Oils</i> General Asphalt Co.	Mexican Petroleum	Texas Company
Pre-war period.....	5.6 ^a	6.6 ^b	4.9 ^c	1.0	4.4	3.7	8.6 ^d	14.5
Total War period.....	7.5	12.2	19.7	5.6	10.5	2.5	9.2	23.6
U. S. Neutral period.....	6.4	14.9	24.5	5.0	10.5	2.1	7.1	24.3
U. S. Belligerent period....	9.1	8.1 ^b	11.5 ^c	7.6	10.6	3.6	12.4	21.5 ^c

Relatives. Pre-war Period = 100

	100	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100	100
Total War period.....	134	185	400	560	238	68	107	163
U. S. Neutral period.....	114	226	500	500	338	57	83	168
U. S. Belligerent period....	162	123	232	760	241	97	144	148

^a Three year average.

^b Fiscal year ended March 31; pre-war period therefore includes four years ending March 31, 1914; fourth period includes two years ending March 31, 1919.

^c Fiscal year ended September 30; pre-war period includes four years ending September 30, 1914; fourth period is for fiscal year 1918 only.

^d Pre-war average based on two years ending December 31, 1913.

^e Fourth period is for fiscal year 1918 only.

PUBLIC UTILITIES

	American Tele- phone and Telegraph	Brooklyn Rapid Transit	Consolidated Gas (Baltimore)	Detroit United Ry.	Laclede Gas	Peoples Gas (Chicago)	Western Union	Consolidated Gas (N. Y.)	Detroit Edison
Pre-war period.....	5.3	7.8 ^a	5.8 ^a	7.7	7.5	6.2	3.5 ^b	6.7	9.8 ^c
Total War period.....	5.2	5.9	7.0	6.9	5.5	2.6	8.0	6.1	11.3
U. S. Neutral period.....	5.3	6.3	7.0	7.8	8.2	5.5	7.5	6.6	12.6
U. S. Belligerent period.....	4.9	4.7 ^a	7.0 ^a	5.6	1.5	-1.7	8.7	5.4	9.6

Relatives. Pre-war period = 100

	100	100	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100	100	100
Total War period.....	98	76	121	90	73	42	228	91	115
U. S. Neutral period.....	100	81	121	101	109	89	214	98	129
U. S. Belligerent period.....	92	60	121	73	20	-27	248	81	98

^a Fiscal year ended June 30; pre-war period includes four fiscal years to June 30, 1914; fourth period includes fiscal year 1918 only.

^b The end of the fiscal year changed from June 30 to December 31 in 1913. The six months from December 31 to June 30, 1913, were included in the figures for the years ending June 30, 1913, and December 31, 1913. Both were used in the average.

^c Only a three year average.

— Deficit.

FOOD PRODUCTS AND CHEMICALS

	American Cotton Oil	American Drug-gist Syndicate	American Linseed	Booth Fisheries	Corn Products	International Agri. Corp.	Loose Wiles Biscuit Co.	National Biscuit Co. ^a	U. S. Industrial Alcohol	Wilson & Company
Pre-war period.....	2.9 ^a	10.0 ^b	.6 ^c	4.0 ^b	2.6 ^d	3.8 ^e	4.0 ^f	8.0	4.5 ⁱ	4.1 ^f
Total War period.....	4.2	10.6	4.5	8.0	7.2	5.0	5.3	6.7 ^h	14.3	11.6
U. S. Neutral period.....	4.4	10.7	4.2	6.0	5.0	3.8	3.4	6.5	11.1	8.3
U. S. Belligerent period.	3.8 ^a	10.5	5.5 ^c	10.9	10.5	8.9 ^e	8.1	7.0 ^h	19.0	16.6

Relatives. Pre-war period = 100

	100	100	100	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100	100	100	100
Total War period.....	145	106	425	200	277	132	132	84	318	283
U. S. Neutral period.....	152	107	396	150	192	100	85	81	246	202
U. S. Belligerent period.	131	105	518	272	404	234	203	87	423	405

^a Fiscal year ended August 31; pre-war period includes four years ending August 31, 1914; fourth period is for fiscal year 1918 only.

^b Average is for two years ending December 31, 1913.

^c Fiscal year ended September 30; pre-war period includes four years ending September 30, 1914; fourth period is for fiscal year 1918 only.

^d Fiscal year changed from February 28 to December 31 in 1912; the figure on December 31, 1912, was for 10 months.

^e Fiscal year ended June 30; pre-war period 1911 to 1914; fourth period is for fiscal year 1918 only.

^f Pre-war period is for fiscal year 1913 only.

^g Fiscal year ended January 31.

^h Fiscal year changed from January 31 to December 31 in 1917. Figures for December 31, 1917, is for eleven months.

ⁱ Three year average.

MISCELLANEOUS CORPORATIONS

	General Electric	American Can	Virginia-Carolina Chemical	American Agric. Chemical	National Lead	American Woolen	Westinghouse Electric
Pre-war period.....	12.1	4.8	4.0	5.5	5.0	2.8	7.7
Total War period.....	12.9	7.8	8.8	10.2	6.9	9.4	16.4
U. S. Neutral period.....	11.0	6.7	7.3	8.9	5.4	6.2	16.8
U. S. Belligerent period.....	15.2	9.4	13.2	14.2	9.2	14.1	15.8

Relatives

	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100
Total War period.....	107	163	220	185	138	336	213
U. S. Neutral period.....	91	140	182	162	108	221	218
U. S. Belligerent period.....	126	196	330	258	184	504	205

^a Fiscal year ended May 31; pre-war period includes four fiscal years to May 31, 1914; fourth period includes fiscal year 1918 only.

^b Fiscal year ended June 30; pre-war period includes four fiscal years to June 30, 1914; fourth period includes fiscal year 1918 only.

^c Fiscal year ends March 31; pre-war period includes four years to March 31, 1914; last period two years to March 31, 1919.

Have Profits Kept Pace With the Cost of Living?

By BASIL M. MANLY

Director, The Scripps Economic Bureau, Washington, D. C.

Former Joint Chairman, National War Labor Board

THE question "Have profits kept pace with the cost of living?" seems to assume that there is, and should be, some relation between profits and the cost of living. The question seems to take for granted that justice and equity require that profits should keep pace with the increased cost of living.

WAGES AND THE COST OF LIVING

There is a definite and well recognized relation between wages and the cost of living. There is general agreement among fair-minded people of all classes of society and of all kinds of economic interests, that the rate of wages should at least keep pace with the increase in the cost of living so that the standard of living of those, upon whose toil the national production depends, should be maintained. There are many indeed, particularly among the "ruling classes," who insist that there should be a rigid and unchanging relation between wages and the standard of living—that the wage earner should not be expected to improve his condition even in times of the greatest prosperity.

Social Standards for Judging Wage Rates

In fixing the rate of wages our present social and industrial standards generally assume that full justice is done to the wage earner when he is paid enough to purchase the necessities of life. Even the highest accepted standards provide that the wage earner and his family shall have only a few of the

luxuries of life and put aside some small savings for rainy days and old age. But the double economic standard of society assumes no such relation between even the most extravagant standard of living and the amount or rate of profits.

When engineers, machinists and other highly skilled workmen began to buy Fords, a large section of society at once set up a cry that economic justice had been outraged and a reduction of wages was in order. But society does not seem at all outraged by the great increase during the war of families who maintain half a dozen homes with a retinue of servants and a fleet of motor cars at each home.

There have been innumerable investigations to determine what is the minimum amount on which a laborer can support his family "in health and reasonable comfort," but no one has ever suggested a government inquisition to discover even the maximum amount which a promoter or speculator should be permitted to lavish upon the maintenance of his family in idleness and extravagant luxury.

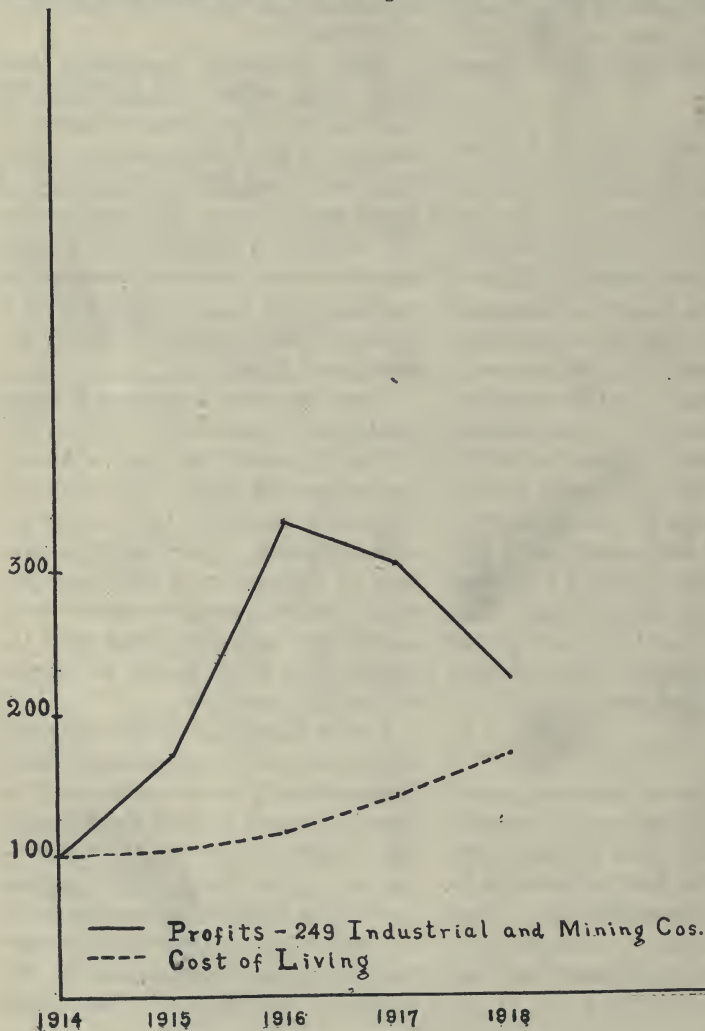
Family Budgets of Millionaires and Wage Earners.—Our government investigations would be more effective if we were sometimes to leave the homes of the workers and go into the homes of the rich. The family budgets of our twenty-five thousand millionaires would be immensely more valuable and instructive than the budgets of any number of wage earners. The budgets

of the workers, at best, merely tell us the amount of surplus or deficit as compared with a decent standard of living. The budgets of the rich would tell us where to get the money to meet the deficits in certain classes of wage and salary earners' budgets and to provide for a hundred pressing public needs.

Wages versus Rate Arbitrations.—There is a splendid field for such an investigation right now. The government in the railroad bill has undertaken to fix rates at a level that will yield at least $5\frac{1}{2}$ and probably 6 per cent upon the value of the roads. As the rate of interest on outstanding railroad bonds averages only $4\frac{1}{2}$ per cent, the 6 per

CHART

Relative Index Numbers of Cost of Living and Profits of Industrial and Mining Corporation.



cent rate level will provide around 8 per cent on stocks—just about twice the rate which the government pays the holders of its Liberty bonds! Surely such a generous government has the right to ask a few polite questions of its wards in finance. The financial wards, the railroad owners, will soon present to the Interstate Commerce Commission a pressing demand for a revision of freight rates to the new levels prescribed by Congress. The Interstate Commerce Commission has a list of the twenty largest stockholders of each of the roads who, together, own more than a majority of the stock. It is the custom in wage arbitrations to ask personal and sometimes impertinent questions with reference to what the wage earners are doing with the money which they already receive. Why should not the commission in considering the rate application do what the railroad arbitration board will do in considering a wage application—dispatch agents of the Department of Labor to the homes of the stock and bond holders to find out what income each is getting and how it is spent. If this inquiry should develop the fact that the majority of stockholders' families have money in the bank or are keeping a servant or an automobile, an adequate basis would exist for denying any increase in rates, according to the wage arbitration standards now insisted upon by the representatives of the railroad owners.

PROFITS AND THE COST OF LIVING

Putting aside this somewhat frivolous but perhaps suggestive line of speculation, it must be admitted that there is no relation between profits and

cost of living. Profits unlike wages are not looked at primarily as a source of subsistence by the majority of those who receive them, but rather as a means of securing increased control over industrial and economic enterprises. Even among the hundreds of thousands of small stockholders widely advertised by the corporations, profits from stock investments are usually considered quite apart from other sources of income, either as "velvet" which can be squandered in luxuries or as the basis of fortunes which they hope to build.

Profits from Bonds.—There are indeed a considerable number of persons, chiefly widows, orphans and retired business men, whose incomes are derived almost entirely from interest and dividends. With such persons there is, of course, a close relation between their cost of living and the return upon their investments. They cannot spend any more than they receive. If their investment returns are stationary in a period of rapid advance in the cost of living, their family budgets must, of course, suffer. It should, however, be noted that in this case we are dealing not with profits but with the rate of return on certain classes of securities which may be absolutely fixed, as in the case of bonds and preferred stocks, so that it bears no essential relation to corporate profits. The purchasing power of these investment returns has greatly declined, although the profits of the corporations out of which they are paid may have increased very greatly.

Profits from Public Utility Stocks

It is a striking and ironical fact that almost the only failures of investment

returns to increase as fast or faster than the cost of living during the war occurred in those lines of securities in which these capitalistic dependents, widows, orphans, and retired business men, have invested much of their capital—bonds, preferred stocks and public utility securities. Such securities were classed as “safe” investments before the war and it was there that trustees and executors delighted to invest the estates of widows and orphans. Now, the purchasing power of the fixed rate of bond interest has been cut in two while the dividends of street railway and many other public utility stocks have practically ceased.

In the field of capital, as in the field of labor, all great social changes, such as a rapid rise in prices, inevitably fall most heavily upon those least able to bear their burdens.

There has been much grumbling among railroad stockholders because earnings on railroad securities have been stationary under the standard return guaranteed by government control. They say they are receiving only the pre-war earnings while the cost of living has been constantly rising. This sounds impressive until it is remembered that the standard return is compared only with 1916 and 1917, the banner railroad years. If we go back to real pre-war conditions, as is usually done with wages, and compare the standard return with railroad earnings of 1912-13-14 and remember that the standard return is a guarantee while the pre-war railroad earnings were a gamble, it will be seen that there is no cause for grumbling.

Profits of Industrial Corporations

When we leave this relatively narrow field of bonds and public utility stocks,

however, and examine the financial reports of other classes of corporations we see that profits, both in amounts and rates, have risen far above even the enormous increases in the cost of living.

The most valuable basis for such a comparison is an exhibit recently presented to the President's Coal Commission by the coal operators. This exhibit is a compilation of the profits of 249 industrial and mining companies for each year from 1911 to 1918. The data for the first three years is somewhat fragmentary and unsatisfactory owing to the difficulty of securing corporation reports as well as to the fact that a large number of the corporations have been organized or completely reorganized since that time.

The purpose of these elaborate tables was to prove that, as profiteers, the coal operators were no more guilty than other industries. It is a remarkable exhibit.

In the exhibit the corporations are grouped by industries. I have, however, prepared a summary table which in a few figures tells the whole story:

PROFITS OF 249 LEADING AMERICAN CORPORATIONS

	Amount	Per cent on Capital Stock
1914	\$368,387,134	7.2
1915	663,375,559	12.3
1916	1,420,369,738	24.2
1917	1,336,821,943	21.9
1918	927,377,714	16.1

It should be noted that in the case of nearly all corporations the amount shown in the table represents the net amount available for dividends after the payment of interest and provision for all taxes including income and

excess profits taxes. In some cases no provision was made for taxes but this is more than offset by the inclusion of excessive reserves for depreciation, taxes and other items by the majority of corporations. It should also be noted that the figures for 1918 cover only 182 corporations, as the reports for 67 were not available. This explains the apparently great drop in profits in 1918. The percentage earned on capital stock is, however, accurate and may be accepted as representative, as it is computed by comparing capital stock and profits of identical corporations.

Corporate Profits and the Cost of Living.—Accepting these figures as a representative index of the earnings of industrial and mining companies, comparison may be made with the standard cost of living index of the Bureau of Labor Statistics:

	<i>Cost of Living</i>	<i>Profits</i>
1914	100	100
1915	103	171
1916	117	336
1917	141	304
1918	172	224

These figures effectively answer the question "Have profits kept pace with the cost of living?"

Profits not only kept pace with the cost of living during the war period, but they also doubled and trebled its increase. The comparison is graphically shown by the diagram on page 158.

Some interesting deductions may be drawn if we calculate for each year the amount of surplus profits for these 249 corporations over the increased cost of living. For example, in 1916 the cost of living index stood at 117, the profits index at 336. After allowing for the increase in the cost of living,

therefore, there was in 1916 a surplus of profits of 219 points, equal to more than two years of profits at the rate of 1914. Taking the four war years 1915–18 together we find that the surplus in the profits index over the cost of living index totals 502 points. Even after allowing for the maintenance of the purchasing power of profits during the war years there is sufficient surplus to maintain the pre-war basis of profits over a period of five years. In other words, even if these corporations should make no profits whatever for *five* years, an average rate of profit equal to that of 1914 could be maintained out of their war surpluses.

I have also compiled from the same exhibit a table showing the average rate of profit earned on capital stock in various lines of industry. These various lines of industry are classified in two great groups, depending upon whether they manufacture primarily for farm and household use or for industrial purposes. It is interesting to note that the greatest *increase* in the rate of profits has been in industries manufacturing industrial material and equipment. This is due primarily to the fact that the rate of profit earned by the corporations manufacturing industrial material and equipment was abnormally low in 1914. The table follows.

Similar statistics drawn from a variety of sources might be presented in great volume, but no matter what source of material is used or what comparisons are made, the conclusion is inevitable. *The average rate of profit of American corporations has increased during recent years far beyond any increase in the cost of living. During the war the increase in the rate of*

profits was so much greater than the increase in the cost of living that enormous surpluses were created which may be drawn upon, if necessary, to compensate for any losses which may occur during the lean years which are likely to succeed the great industrial boom which occurred during the war.

AVERAGE RATE OF PROFIT EARNED ON CAPITAL STOCK

	1914	1915	1916	1917	1918
<i>Farm and Household Supplies:</i>					
Agricultural implements.....	6.7	8.6	9.3	12.4	9.8
Baking.....	7.7	6.2	6.7	8.3	8.5
Boots and shoes.....	1.1	8.2	14.7	19.6	17.7
Canning.....	4.5	9.9	13.2	32.2	14.9
Coal-Anthracite.....	18.6	17.2	18.3	22.9	16.9
Cotton goods.....	11.7	8.0	13.3	17.9	20.5
Fertilizers.....	10.8	5.7	9.9	8.4	13.4
Flour mills.....	20.8	13.8	13.1	26.8	16.5
General merchandising.....	5.1	12.3	16.1	14.8	13.0
Ice.....	2.9	3.0	4.0	5.6	6.3
Musical instruments.....	6.9	8.5	11.6	6.6	17.6
Petroleum.....	9.6	18.6	35.4	30.4	22.3
Printing and publishing.....	4.1	4.4	5.6	5.1	4.5
Silk.....	11.8	12.9	17.2	20.4	18.4
Slaughtering and meat packing.....	16.0	21.9	23.6	32.5	16.8
Sugar.....	6.4	10.2	19.1	14.4	10.7
Tobacco.....	11.8	13.2	15.3	13.3	16.6
Woolen and worsted.....	5.4	7.6	10.1	18.7	10.2
Total.....	9.5	12.8	19.7	20.1	15.0
<i>Industrial Material and Equipment:</i>					
Acids, chemical, etc.....	9.1	12.6	20.1	16.5	16.7
Automobiles.....	8.8	18.7	20.9	14.4	11.7
Clay products.....	3.4	3.5	8.6	15.8	13.5
Coke (by-product).....	14.4	13.3	81.9	44.5	17.9
Electrical appliances.....	8.4	9.9	16.7	21.5	16.3
Explosives.....	10.8	45.0	70.5	37.8	32.6
Glass.....	6.1	6.2	19.1	22.3	15.9
Iron and steel.....	2.8	9.6	33.9	27.5	16.1
Leather.....	5.5	8.0	18.0	16.6	10.1
Lumber.....	1.1	0.9	7.5	11.0	3.2
Miscellaneous machinery.....	5.9	11.1	22.7	13.5	13.9
Mining—copper.....	11.6	19.4	38.0	36.0	19.4
Mining—lead.....	6.8	15.3	22.4	19.5	16.8
Paper and wood pulp.....	2.1	1.7	10.7	11.9	9.0
Railway equipment.....	6.3	6.1	13.5	13.8	15.4
Rubber tires.....	9.9	14.0	14.6	19.0	21.8
Shipbuilding.....	3.0	5.1	8.7	22.6	30.9
Total.....	5.8	12.1	27.5	23.3	16.9

Prices and Excess Profits Taxes

By DAVID FRIDAY
University of Michigan

IF we may judge by the utterances of business men and of the press, the great mass of the American public believes that the excess profits tax has been largely responsible for the present high level of prices. Most of those who have spoken or written to this effect have thought it unnecessary to present proof in support of this conclusion; nor have they gone to the trouble to examine in detail the logic of the supposed causal connection. The report of the New York Chamber of Commerce states that "the effect of excess profits taxes on business enterprises and on the high cost of living is so evident as to require little explanation." May it not be possible that here, as in so many other instances in the history of political economy, the co-existence of two phenomena in time may have led to an erroneous conclusion with respect to their causal relations? The excess profits tax will no doubt be abandoned before the presidential election next fall. Its repeal will be conditioned upon considerations other than its effect upon prices, but it is incumbent upon the economist to examine critically the assertion that our first differential tax upon profits raised the price level by an amount greater than the tax.

The discussion of this question has proceeded with little reference to the facts concerning prices, profits, or taxes. These facts seem to the writer of such an unusual nature and so essen-

tial even in a theoretical discussion of the subject that he has decided to adopt the method employed by Sir William Petty in his *Political Arithmetic*. "The method I take to do this," said Sir William, "is not very usual; for instead of using only comparative and superlative words, I have taken the course to express myself in terms of number, weight or measure; to use only arguments of sense, and to consider only such causes as have visible foundations in nature."

EFFECT OF EXCESS PROFITS TAX ON THE RISING PRICE LEVEL

To one acquainted with the course of prices, profits and taxes, there are disturbing facts which do not harmonize easily, to say the least, with this glib theory which finds in the excess profits tax the chief cause of the rising price level. The price level did not wait for the advent of the excess profits tax in America. It started its ascent in July, 1915 and continued it blithely until in March, 1917, the month previous to our entrance into the war, it stood at 160 per cent of the 1913 level. It continued its rise until July, 1917; at that time it stood at 185. No excess profits tax law had yet been passed. The first law was passed in October, 1917, but no material rise in price occurred for some months thereafter.

Under this first excess profits tax law the combined corporations of the United States paid 15.27 per cent of

their reported net income in excess profits tax. After doing so, they had remaining net income equal to 210 per cent of the highest amount which they had earned in any pre-war year. For the year 1918 the excess profits rates were increased to the point where they absorbed approximately 25 per cent of the profits of that year. In 1919 the rates were materially reduced. As against \$2,400,000,000 of taxes in 1918 they yielded only one-half that amount in 1919. Prices in 1918 averaged 197 as against 175 in 1917 and 160 in the month previous to our entering the war. Despite the reduction of the tax in 1919 prices stood at 238 in December of that year. What we have, then, is a rise of 60 per cent in the price level before any excess profits tax was either levied or discussed, and a further rise of 27 points before the tax was passed. Then a comparatively slight rise in prices during the period of our highest excess profits taxes, and a renewed and rapid rise when the amount of the tax was cut in half. If one were satirically inclined, he might affect to look with apprehension upon a further reduction in the excess profits tax. This brief review of the course of prices and of taxes certainly casts serious doubt upon the assertion that "the effect of excess profits taxes on business enterprises and on the high cost of living is so evident as to require little explanation."

Nor does a study of the course of profits lend any support to the statement that "for every \$6.00 or \$7.00 taken from the consumer, ostensibly for excess profits tax, only \$1.00 ever reaches the United States Treasury." It would follow from this that profits

had increased, not merely by the amount of the tax, but that they had far outrun the amount collected by the government. But this is not what the statistics of profits disclose. They show profits as follows before deducting taxes:

1913.....	\$4,339,551,000
1914.....	3,940,000,000
1915.....	5,310,000,000
1916.....	8,766,000,000
1917.....	10,730,000,000
1918.....	9,500,000,000
1919.....	8,500,000,000

The figures for the years 1918 and 1919 are based upon estimates so carefully made that the final published figures will be but slightly different. After paying excess profits taxes the amount of net income remaining from 1917 to 1919 was as follows:

1917.....	\$9,100,000,000
1918.....	7,100,000,000
1919.....	7,300,000,000

It is not true, therefore, that profits have increased since the imposition of the excess profits tax. Nineteen hundred and seventeen was the highwater mark of profits, and the tax was not imposed until the year had almost closed. After paying taxes the profits of 1918 and 1919 are far less than they were in 1916.

All of this reasoning concerning the effect of excess profits taxes upon prices rests upon one of two assumptions. Either it assumes that the state of demand during the last three years has been such that the public has been willing to pay practically any price and that sellers would not have charged high prices except under the necessities imposed upon them by the tax. This assumption certainly needs proving. It is not the sort of

thing which can be accepted as a matter of course. The alternative assumption is that the profits of industry are such a small return upon the capital that the addition of a tax made it no longer worth while for the entrepreneur to remain in production. Therefore, unless the tax can be added to price, production is decreased and price rises in consequence. Now the figures already presented show that the profits of 1916 were already twice as high as those of any pre-war year, while those of 1917 were two and a half times as high. The following table shows that the tax fell heaviest upon industries like manufacturing, mining and trade. These are the industries which had profited most by the war.

shows the net income for 30,892 corporations classified by industries and grouped according to the percentage which the corporations earned upon their invested capital. This table might well serve as a warning to those who desire the abolition of the excess profits tax. They were wise to confine themselves to "comparative and superlative words, instead of citing facts." For if the public is given these facts, fully and honestly, it will probably be impossible to abolish the tax.

RELATIVE POSITION OF SUPPLY AND DEMAND

Those who believe that all these movements in the price level were caused by the excess profits tax ascribe

TABLE I

Net Income and Excess Profits Taxes of all Corporations in the United States Pre-war and in 1916 and 1917 (Expressed in Millions)

Year	Financial	Railroads and public utilities	Manufacturing, mining, and mercantile	Total
Average net income, three years, 1911-1913.....	\$459,154	\$913,299	\$2,422,683	\$3,795,136
Net Income, 1916.....	528,506	1,541,076	6,696,327	8,765,909
Net Income, 1917, before paying excess profits taxes.....	962,860	1,303,824	8,463,676	10,730,360
Excess profits taxes.....	41,767	60,450	1,536,531	1,638,748
Net Income, 1917, after paying excess profits taxes.....	921,093	1,243,374	6,927,145	9,091,612
Per cent tax to net income, 1917.....	4.33%	4.63%	18.15%	15.27%

The actual percentage which various corporations earned upon their invested capital in 1917 is illuminating in this connection. It is also significant as throwing light upon the validity of our assumptions concerning the normal rate of profit. The next table has been prepared from the Senate Document entitled "Corporate Earnings and Government Revenues." It

to that fiscal measure remarkable powers of levitation, for according to their analysis it produced an increase in price even when the tax was falling. Where the forces are so many and so complex as are those which lie at the foundation of the price level it is impossible to make convincing statistical proof of causal relations. We must supplement our investigation of facts,

therefore, with *a priori* analysis. Here the economist's analysis of the forces which control price lends little color to the proposition that a differential tax on business profits will affect price. No doubt it still holds true that supply and demand are the only doors through which the effective causes of change can reach prices. We may safely assume, too, that the marginal pro-

ducer will have an effect upon price, especially if he is tax free and if he contributes a substantial portion of the supply. Now with respect to the relative position of supply and demand, the situation during the last three years has probably been one in which the supply of goods could be but little increased. Further, the visible supply is far short of the demand at pre-war prices or even at the prices which prevailed when the excess profits tax was first imposed. The condition was one, therefore, in which it was possible to sell goods for a price largely in excess of cost and so at a profit above normal. In such a situation prices rose. But surely it is a bit bold and unwarranted to assume that prices will rise to this

THE MARGINAL PRODUCER

The tax can be added to price only if it falls on the marginal producer. But the marginal producer, if he be the one who is operating at the least profit, or at any profit not greater than 8 per cent, pays no tax. If he be a

TABLE II
Net Income of 30,892 Corporations in 1917

Percentage of net income to capital	Financial	Railroads and public utilities	Transportation by water	Agriculture	Manufacturing, mining, and mercantile	Total
Under 10%	\$13,196,481	\$349,189,634	\$1,234,161	\$11,406,299	\$101,952,626	\$476,979,201
10-15% . . .	29,993,941	70,634,613	476,988	12,329,659	275,712,345	389,147,546
15-20% . . .	6,086,476	21,207,001	342,609	11,727,481	537,246,584	576,610,151
20-25% . . .	4,997,479	5,053,306	795,384	8,918,816	546,806,982	566,571,967
25-30% . . .	1,098,866	3,531	2,337,854	6,846,975	313,941,558	324,223,784
30-40% . . .	767,187	30,486	7,000,892	13,042,739	668,613,578	689,454,882
40-50% . . .	182,685		3,728,476	1,837,818	1,183,859,402	1,189,608,381
50-75% . . .	50,299		4,496,975	12,754,592	275,655,773	292,957,639
75-100% . . .	9,809		21,542,242	449,198	111,374,338	133,375,587
Over 100%	123,018	52,229	1,395,374	296,999	116,164,233	118,031,853
Total	\$56,506,241	\$446,170,800	\$43,350,955	\$79,610,576	\$4,131,327,419	\$4,756,965,991

ducer will have an effect upon price, especially if he is tax free and if he contributes a substantial portion of the supply. Now with respect to the relative position of supply and demand, the situation during the last three years has probably been one in which the supply of goods could be but little increased. Further, the visible supply is far short of the demand at pre-war prices or even at the prices which prevailed when the excess profits tax was first imposed. The condition was one, therefore, in which it was possible to sell goods for a price largely in excess of cost and so at a profit above normal. In such a situation prices rose. But surely it is a bit bold and unwarranted to assume that prices will rise to this

producer who was making more than 8 per cent and demands that larger amount because of opportunity cost, there is no escape for him by shifting to another industry, since he will be obliged to pay the excess profits tax in any other industry in which he may engage. It would seem pretty clear, then, that short of actual withdrawal from productive enterprise, the tax is not one which will affect supply in such manner as to increase price.

It is of course conceivable that the marginal producer may be of so little significance that his withdrawal from the field of production would not cause a material curtailment of supply, and that his presence does not affect

competition sufficiently to influence prices and prevent their rise.

NON-TAX-PAYING PRODUCERS

On the number and importance of non-tax-paying producers, we have, fortunately, some statistics. Nineteen hundred and eighteen was the year of the highest excess profits tax rates. A sample of 6,712 corporations shows that 3,064 of that number paid no excess profits tax whatever. These represented almost exactly one-third of the total invested capital of this group of corporations. They earned, on the average, 5.2 per cent. During the pre-war period, their capital was over 38 per cent of the total of this group, and they earned 7.4 per cent on their invested capital. It is very difficult to believe that these establishments representing 45 per cent of the total number and one-third of the total capital exercised no influence in competitive price making.

When we examine the remaining 3,648 corporations we find that 1,497 paid tax under the 30 per cent bracket, and that their total tax amounted to only 7.66 per cent of their net income. This group, together with those that paid no taxes, had over 60 per cent of the invested capital of these 6,712 corporations. Certainly their freedom from excess profits taxes should have given us abundant guarantee against the shifting of this tax.

But, as Hobson long since pointed out, it may be that neither of these groups is marginal, that the marginal man is found among those who made extraordinary profits. These are the men who have great resourcefulness and initiative and can easily shift to new fields. But shifting avails them

nothing, as the excess profits tax applies to all fields of industry.

But one possibility still remains. May they not agree with the father of Huckleberry Finn. When the elder Finn was just entering upon the early stages of delirium tremens, he summed up his attitude toward our political institutions in general in the trenchant conclusion that "this is a hell of a government." May they not, similarly minded, withdraw from industry altogether, and from their citadel of past profits, accumulated in the days when there were no excess profits taxes, observe what the *Wall Street Journal* calls the "vampire-like" activities of the government.

TAXES ON EXCESS AND WAR PROFITS

The rate of profits which was sufficient to induce them to remain in business during the pre-war period would seem to be the best evidence on this point. Of the 6,712 corporations whose incomes were cited for 1918, 2,151 corporations paid practically all of the \$121,039,923 of taxes of this group, 1,497 paid \$7,412,123 and 3,064 paid no taxes. During the pre-war period these 2,151 major taxpayers had earned \$89,298,925 on an invested capital of \$603,000,000. Evidently 15 per cent was sufficient to keep them in production during these pre-war years. During 1918 they earned a net income of \$281,775,190 on an invested capital of \$1,060,000,000 or 26.6 per cent on their invested capital before taxes. Of this the government took 43 per cent, leaving them approximately 15.2 per cent free and clear on an amount of capital 40 per cent larger. This additional capital largely represented war profits of

the years preceding 1918. These corporations would hardly be moved to withdraw from industry altogether by the workings of the excess profits tax.

But these taxes include not only those upon excess profits, but the war taxes as well. Since the war profits taxes were levied for only a single year and do not apply to the profits of 1919 or subsequent years, we must know the size of the excess profits tax alone and the ratio of that tax to capital. This amounted to \$88,309,393 for the 2,151 corporations, and constituted 31.3 per cent of the net income of these corporations, leaving them 18.2 per cent on their invested capital after paying taxes, as against 15 per cent in the pre-war period. Under the rates in force in 1919 these corporations would have paid less than \$58,000,000, and would have remaining over 21 per cent on their invested capital.

Which of these groups of corporations, then, actually curtailed supply, or even threatened to do so, in such manner as to produce the rise in price? In other words, who shifted whose taxes? In the absence of monopoly it is extremely difficult to believe that any of them curtailed their supply. The buyer was placed at the mercy of the seller, not by the excess profits tax, but by the fact that the general supply of commodities had reached its maximum. There is absolutely nothing to prove that buyers would not have been just as completely at the seller's mercy if there had been no excess profits tax. Nor is there anything to prove that the seller would not have pursued his advantage as vigorously. That is an end for which sellers strive diligently and skilfully.

MONOPOLISTIC ENTERPRISES AND TAXES

But what of monopoly? It is a well-known principle of price that prices of goods marketed under monopolistic conditions are fixed at the point where they will yield the highest net profit. It avails the monopolist nothing, therefore, to raise his price when he is confronted with an income tax. Any change in price will lower his tax, it is true, but it does so only by lowering his income. The amount that remains after payment of taxes will be less at the new price than at the former one. Of course, if a monopoly puts itself upon a fixed profit per unit, as some automobile manufacturers are said to do, then it may be that the imposition of an excess profits tax will produce an increase in price. But this is only because the monopolist had not pushed his advantage to its logical conclusion before.

In cases of monopolistic enterprises or of other enterprises which are making high percentage of profit, the working of the excess profits tax actually tends to stimulate the investment of new capital in the old enterprise and thus to increase the supply and lower the price of the product. Moreover, this is the more true as the maximum rates of taxation are increased. For the additional invested capital will add to the ultimate net income available for distribution, not only the amount which is earned from the sale of the additional product, say 5 per cent, but it will increase the exemption by 8 per cent of the invested capital and so reduce the amount which is subject to the highest rates. Thus, if a company on an invested capital of \$10,000,000 makes a net income of

\$2,500,000 (or 25 per cent) its excess profits taxes under the 1919 rates would be \$439,400 and its net income after taxes \$2,060,600. Now assume that the investment of \$2,000,000 of additional capital will increase its net income by \$100,000 or 5 per cent on its additional capital. This return would probably not be sufficient inducement for the investment. But an excess profits tax at even the low rates of 20 and 40 per cent which prevailed in 1919 will now be only \$367,400 on the net income of \$2,600,000, leaving \$2,232,600 after payment of taxes. If we compare this amount with the amount remaining originally, we find that the net income left to the corporation has increased by \$172,000, or 8.6 per cent on the additional invested capital of \$2,000,000. This would probably be a sufficient inducement for the new money, as it is well above the going rate of interest. This effect of additional invested capital has been recognized by those who have advised corporations in excess profits tax matters, and has been noted by J. C. Stamp in a recent article in the *Economic Journal*.

EXCESS PROFITS TAX NOT CAUSE OF INCREASED PRICES

Neither the statistical facts nor the implications of economic law support the conclusion that the excess profits tax has been responsible for the increase in price which we have witnessed during the last five years. The most that can be said for it is that the tax may have given some seller the courage to move his price up a little

earlier, or a little farther, than he would otherwise have done. But not even this much can be conceded for the rise of 60 points which occurred between July, 1915, and March, 1917.

Change of Institutions and Attitude

To trace the effect of the complex and tangled causes that have produced the present price situation is a long and arduous task. In the writer's opinion any such explanation must take as its point of departure the complete revaluation of ends which took place in the European mind when the nations went to war. It must conclude with an analysis of the present inefficiency of labor, a factor which increases the cost of the labor element in production far more than is indicated by the mere rise of wage scales per hour or per day. Between the beginning and the end of the war a whole series of institutions and of human attitudes has been wrecked. The gold standard, conservative banking policy, a private economy which set store by a constant power to demand the things needed for a customary class standard of living, our mental attitude toward national indebtedness, our conception of what constitutes an honest day's work for an honest day's pay; every one of these phrases stood at the beginning of the European war for a definite part of the institutional situation within the confines of which the industrial life of the people moved. Every one of these institutions has been radically changed. In the story of that change lies the explanation for our new price level.

The Problem of Incentives and Output¹

By ORDWAY TEAD

Bureau of Industrial Research, New York City

IT is a fair assumption in all discussion of incentives to work that admitting, as we must, the need of maximum productivity at the present hour, we also admit that the results and benefits of increased production should accrue to all groups of industry and the community. Those of us who have been longest in the field of personnel administration are increasingly impressed with the professional quality and status of personnel work. We are not merely underlings hired to keep factories full of workers; we are, or should be, competent executives imbued with professional standards which suggest that our work is successful to the extent that we are servants not only of a corporation, but also of the community. For the essence of this professional status, I take it, is a sense of high ethical obligation to conform to standards of sound procedure, just conduct and public service, to the extent that we have come to see the light on these matters.

I say all of this by way of preface because from the start personnel and other executives should realize clearly that they have no interest in exploiting

¹Read before the National Association of Employment Managers, New York, February 28, 1920.

For fuller treatment of the same subject see Chapter XV, "Arousing Interest in Work," in Tead and Metcalf *Personnel Administration: Its Principles and Practice*. McGraw-Hill Book Company, 1920.

the human nature of the manual workers under them. They have, as professional managers, only an interest, and a very deep interest, in having work done well, quickly and in abundance. We want to see the necessary maximum production obtained with the minimum of effort and friction.

One thing which is increasingly plain today is that there is unnecessary effort and needless friction, both human and mechanical, where there is no interest.

Indeed, the text of today's discussion is that the roots of efficiency are two: namely, perfection of mechanism and process, and application of human energy in the most effective way. We know today that the most effective way of applying human energy, is to have people voluntarily eager and absorbed in what they are doing—in short, interested.

If, then, interest in work is one of the essentials to fundamental efficiency, it is important to carefully analyze the elements of interest, that we may understand what practical provision should be made for arousing it.

DEFINITION OF INTEREST

People are interested when an activity tends to keep occupying their attention and absorbing them by some appeal. The appeal may lie in the very difficulty of the task or in the downright enjoyment in its perform-

ance, or it may be in the anticipated approbation of one's associates, due to one's proficiency. People are interested when attention has passed the point of conscious effort, and has become eager, immediate and spontaneous. Attention can be so commanded when we are actively engaged—have a definite object in view and recognize something at stake, "something whose outcome is important for the individual." A display of interest is therefore a display of "self-expressive activity."

Elements of Interest in Work.—The essential elements of interest in work seem to be: (1) self-choice of the activity; (2) pleasure in its continuance; (3) a sense of significance and value in its performance; (4) opportunity to secure the approval of one's associates for one's accomplishments.

A condition of monotony exists where these elements are lacking. Remove the chance for self-choice of the action, for understanding its significance, for having the approval of one's fellows, and the labor is sheer drudgery. "Monotony means that growth and development have ceased."² Monotony is present when work has become so habitual as to be automatic, that is, when it is making no demands upon the active attention; or when work is found to be temperamentally uncongenial, and is thus, for any reason, precluding the chance for self-expression and development through the work.

Reaction of the Worker to His Work.—If these definitions are correct, interest and monotony are not characteristics

of certain kinds of work. They are characteristics of people in their reaction to certain kinds of work. A job is not inherently interesting nor inherently monotonous. It is interesting or monotonous *to a worker*. There are inevitably these two aspects contributing to create the one fact of the worker in-his-relation-to-his-work. In each separate case the two must fit; the worker must find the job that satisfies him. He must be able to register there; and in order for this to happen it must fit from the point of view of opportunity *for him*, in relation to his capacity, motives and desires. It is, in short, a dynamic and changing fact. The worker is either progressively more interested because the adjustment is always improving, or he is progressively less interested, and usually less capable of being interested in the work.³

Jobs, as jobs, are therefore neither interesting nor the opposite. It all depends on the relationship. But there are, of course, jobs which because of their simple content do quickly become habitual and are then automatic. Any prolonged performance of such jobs will, of course, become monotonous; and whether, as now constituted, they can of themselves be interesting is, in our opinion, a grave question. The possibility of developing a derived interest for this type of work must be considered. But there are many jobs usually thought of as monotonous, which require thought, care and attention, and could therefore be much more interesting than they are, if only the worker

²Dewey, John. *Interest and Effort in Education*, p. 36.

³See *A Point of View in the Field of Industrial Personnel*, The Scott Co., Laboratory, June 24, 1919.

had the knowledge, ability, aptitude and background, out of which interest would normally arise.⁴

JOB ANALYSIS

This points to a fundamental need: the need for analysis of the *intellectual content of jobs*. From the point of wise selection of workers, promotion, transfer, modifications in process and training, we need more exact data as to what qualities, aptitudes, traits of temperament and technical knowledge each job demands. Such study we can confidently predict from all the job analysis which has thus far been done, reveals an astonishing amount of special skill required at many supposedly monotonous tasks.

Such study will, moreover, tell us how many jobs of each different kind there are in a factory. We know that it is inaccurate to speak of all factory work as repetitive drudgery. The work of machine maintenance occupies some workers. The handling of

⁴ An interesting illustration of this is given by F. H. Selden, "A Just Standard of Industrial Intelligence," in *American Journal of Sociology*, May, 1919, p. 646. "Usually, only cheap help was employed at this machine, as the foreman prided himself on getting work out at a minimum of expense. The regular hand quit and it was necessary to put another man in his place. The new operator looked the machine over, fixed it up, and decided to run it on a faster speed. To do this he must watch it very closely. . . . This necessitated his keeping his ear close to the cutter. Being a tall person this could be accomplished without undue fatigue only by sitting down. He got a nail keg and sat close to the machine, but as his ear was directed toward the cutter his eyes were apparently looking about the room. Only a day or so elapsed before the foreman called him down for his lazy tendencies in sitting at his work. This resulted in his putting his machine back on slow speed and assuming an attentive attitude."

materials and trucking occupies others. There is assembling, inspection, packing, shipping. The actual proportion of unskilled machine-feeders varies from plant to plant, but apparently it runs between 40 per cent and 80 per cent. We must not ignore the fact, however, that the elements of insecurity in the job, non-control over work, little significance in the work, little chance for fellow workers' approval, may all be present at repetitive and non-repetitive jobs alike, and that monotony exists wherever the chance to make the job one with one's self is no longer present.

CAUSES FOR LACK OF INTEREST AMONG WORKERS

I should like next to consider why it is that, at present, we have so little interest in work among the rank and file—a fact to which both workers and managers have widely testified. This is, in a sense, a negative point because it further delays consideration of practical suggestions for getting interest, but since the rest of the day is devoted to the technique of this subject, it is valuable to spend enough time on the introduction to get a really sympathetic understanding of the causes of the present condition.

It is plain, from what we have said, that when interest is present there is a pleasant condition of mental stimulation, alertness and responsiveness in the individual. But certainly mental stimulation, alertness and responsiveness are not the qualities which the ordinary manager conceives as being present in the rank and file.

Fear.—In this connection I wonder if it is generally realized what a determining part fear has played in

shaping the mental life of manual workers. Fear is an emotion which gives rise to a strained, tense and abnormal state of both body and mind. The subject of fear, particularly if the fear is continuous, is balked and in a sense prohibited from the use of all his faculties. Whatever alertness or responsiveness the fearful person has is all in the direction of removing his fears, or of protecting himself from having them realized.

Of foremost importance to the worker is the fear of unemployment. The fear of losing one's job, either because business has become slack or because, through arbitrary exercise of authority, there may be an unfair discharge, is constantly present. As Whiting Williams says in his interesting article on "What the Workers Think," in *Colliers*, February 21, 1920, "give us this day our daily job," is the secret prayer of every worker, particularly if he has a family. There is fear that wages will not cover necessary expenses; fear of the undesired arrival of another child, or of sickness that will bring an emergency demand on income. There is also the fear of reprimand—the fear of being "bawled out" by the foreman. "I doubt," said Henry S. Dennison in a recent address at Richmond, Va., "if there is a man here who believes that he can make better progress in his factory by bellowing at his men and I doubt if there is a man here in whose plant there cannot be found some sample of the bellowing-bull type of foremanship."

There is the fear, sometimes conscious and sometimes not, that the reorganization of process and method, which is frequently taking place in

factories, means such a change in the method of doing the work that the worker's acquired skill will no longer have value. This applies particularly, of course, to the introduction of machinery, the incidence of which, as it falls upon the individual worker, may be temporarily unfair and cruel.

Then there is a fear, which has in the past unfortunately had all too good a basis in fact, that the more work the individual did the less return he would get for it because wage rates would be cut or orders would be more quickly completed and a lay-off would ensue.

Unresponsiveness.—In addition to this fact of fear as a cause of non-interest, there is the fact of a mental condition only to be understood in the light of the worker's early years—a condition of unresponsiveness and even seeming lack of ambition and capacity. This condition, I believe, is in nine cases out of ten a pathological condition. Such people are under-developed mentally, not because they are lacking in native capacity, but because there has been a persistent suppression of their natural mental responses. They are the victims of suppressed desires; and it is important to remember in this connection that psychologically the greater and the longer the repression to which the individual has been subject, the more difficult it is for his emotional life to thrive in a wholesome way.

Recent psychologists point to the importance in individual life of what they term "infantile fixations," by which they mean the influences which were of determining importance in shaping the mental life of the individual in his first five years. They even go so far as to say that the mental environment of those early years conditions

in a fundamental way the individual's possibilities during the rest of his life.

The Immigrant Worker.—We have, I believe, at least three groups among our manual workers to whom we can come with far greater insight and understanding than at present, if we understand the importance of this psychological truth.

In the ten years before the war there had been at least 10,000,000 immigrants into this country, the majority of whom came from central and southern Europe. This means that the early mental environment of that majority was vastly different from that which they found in their new surroundings. The civilization from which they came was an agricultural civilization. They were mostly peasants, often only one or two generations removed from serfdom. The influence of an autocratic state and autocratic church had reduced educational and cultural opportunities to a minimum; it was literally true that such people did not have a childhood in which the normal impulses were allowed satisfaction and adequate development. Because of that tireless vitality which characterizes the human race, they were, in fact, so dissatisfied with their restricted life that they broke through, and came to this country in an effort to secure release. In my judgment, this manifestation of initiative betokens a real stamina and a virility which our country needs; but even so, those people cannot make amends in their generation for the restrictions and mental and emotional impoverishment of their own childhood.

The Tenement Child.—We have a second group of workers which have grown

up in our large industrial cities. You should read Miss Jane Addams' fascinating account in the *Spirit of Youth in the City Streets*, to realize the consistent and dangerous manner in which our tenement life deprives children of the opportunity for normal releases. Their sense of adventure must come from such escapades as stealing fruit from street peddlers, stealing milk bottles, stealing rides on cars, and in each case trying to get the sense of the chase by eluding the policeman. Their experience of sex matters begins at an unduly early age because where a whole family occupies two or three rooms it is inevitable that this whole side of life should come conspicuously to a child's attention and arouse prematurely and abnormally impulses which need no artificial stimulus. Physically and emotionally, workers who grew up in our slums did not have the chance to be normally developed.

The Company-Town Worker.—And we have in our company owned mining communities and in our isolated textile towns a third group of children, whose childhood has all the characteristics of that of the slum children without the excitement of the city streets, but happily with the addition of green grass and trees, unless perchance, as in coal mining towns, the countryside has dried up under the withering blight of coal dust.

THE TASK OF STIMULATING THE WORKER'S INTEREST

I am not trying to overdraw the picture, but I hear so frequently the objection that people do not want to be interested in their work or that they like monotonous work, that I

want to stress the point that where managers find this to be the case, workers are usually responding sub-normally to an unwholesome situation. Normal people, I can assure you, do insist and will insist that the activities upon which they are to be engaged during the majority of their working hours shall engage their interest in real and permanent ways. Personnel executives have a very important and worthwhile obligation both to workers and managers in helping to effect a release of human energy, an out-flowing of natural human releases which will remove so far as possible these infantile limitations and these haunting fears of adult life.

Our task in securing interest in work is, in a word, the task of clearing the mental air in the life of thousands of individuals; the task of restoring people's self-confidence and self-respect to them; the task of calling out and summoning to new expression powers which the individuals themselves do not realize that they have. It is a fascinating study in group and individual psychology because we are going to find that different people and different groups will be stirred and moved to this release of creative power in a variety of ways.

William James puts the question and answer in a significant way. He asks "to what do the better men owe their escape; and, in the fluctuations which all men feel in their own degree of energizing, to what are the improvements due when they occur? In general terms the answer is plain: Either some unusual stimulus fills them with emotional excitement, or some unusual idea of necessity induces them to make an extra effort of will.

Excitements, ideas, and efforts, in a word, are what carry us over the dam."

If it is true that excitements, or emotional appeals, and ideas, or intellectual appeals, plus concentrations of effort or will, are what bring releases of energy, the problem today, as I see it, is to discuss what practical excitements and ideas are stimulating to interest in work. How, to put it differently, can we get opportunity for the individual in industry to have freedom of choice, pleasure in the work for its own sake, a sense of its significance and value and the opportunity to have the approval of one's fellows?

ROTATION OF WORKERS IN MONOTONOUS OCCUPATIONS

It seems to me that all the activities of the personnel department that have to do with intensive job study, that have to do with right selection and subsequent adaptation of the worker to his work, gain enormously in importance as soon as a plant decides to embark on a systematic program of making its work interesting; because all of these matters can help greatly to facilitate a freedom of choice and intelligent choice in work.

In this connection also, I am confident that plants are going to have to resort much more than they have recognized, to a systematic plan of transfers. We have as yet done hardly anything to compensate for the dullness of the most routine jobs by insisting that no worker shall be allowed to remain at them beyond a certain length of time. I appreciate that such a policy of transfer requires a change in the mental habits of both managers and workers, but it is a

change that looks in the direction of a better mental balance in the worker's life and ultimately, therefore, a more adequate release of his positive and active qualities. One of the watch-words of a campaign of getting interest in work is going to be: It pays to transfer.

Instruction Program for Workers

There are many types of jobs in which the worker will find pleasure in their performance simply because the activity itself is something which he craves. But we can only have pleasure in doing a thing for its own sake when we do it well. No one likes to do something for any length of time at which he is not proficient. This argues for the importance of a job instruction program in a scheme of securing interest. Managements owe it to their workers to put them at once into possession of all the available information about the best way to do the work that they have to do. Proficiency in itself is pleasurable. There is also pleasure in doing the work if, in the doing, some improvement can be made—some change in method of process which appeals to that sense of economy in the use of energy which is native to human nature. The contrivance of labor-saving devices is a pleasurable activity.

I am especially glad also to stress the place of the shop committee as a stimulus to production, because I believe that both in the direction of discussing and adopting improvements in process and in organizing the approval of one's fellow workers, the shop committee can have substantial value. Indeed, until the shop committee becomes a work or production

committee, it is only fulfilling a small part of its purpose.

Standards of Output.—It is of the very essence of interest in the work that the outcome of the negotiation about reward in relation to effort be clear and explicit as it is not today. At present we have no standards of a fair day's or week's output which have been formally agreed upon. We negotiate about pay; but not about the amount of work which is to take place in relation to that pay. I, for one, am convinced that study and negotiation about fair amounts of work, which is a proper subject for shop committee or collective bargain action, promises, when jointly done, to be one of the greatest spurs to interest. For it must inevitably develop out of such joint study and decision that all methods of technical procedure are considered and standards of fair amounts' of output for workers of different degrees of skill are adopted; and thus another legitimate spur to proficiency will be provided.

In saying that a sense of significance or value in the thing done is an element in interest, we point to a truth which managers must discover anew and begin to apply afresh, namely, the close relation that exists between knowledge and action. We cannot be pleased with what we are doing and doing well unless we have some means of knowing that we are doing it well—knowing something of the results. There must be some measure of proficiency, and some publicity of it. One of the great values of the work that Robert B. Wolf has done on production records is that it acquaints both the individual with his own proficiency and also makes it possible at the same

time to compare his achievement with that of his co-workers.

Our activity also gains in momentum to the extent that we understand why it is that we are doing what we do; when we understand its meaning to us. A vital element in the worker's understanding of what he is doing is acquainting him with the relation of his process to the whole production and of indicating the use of the production to which he is contributing.

Mark Jones has a good story, in that connection, of a man visiting a plant where he found that the imagination of the office and executive organization had caught fire over the importance of a big order of pumps which were being made for an irrigating project in the Sahara desert. A sense of the significance of their work had aroused a new interest. But when in walking through the factory he got to the shipping room he asked one of the truckers who had some of the crated parts on his truck where the pumps were going, the worker shrugged his shoulders and said "they are going onto the freight car." That was as far as his knowledge of the transaction carried and he had, of course, as much interest in the work as that lack of knowledge should bring. I say that right down the line the workers have the right to the knowledge of the meaning and significance of what they are doing—its meaning to them in terms of accomplishment and reward, its meaning to the company in terms of volume and value of shipments, its meaning to society in terms of the use to which the product is to be put.

Organized Approval of Fellow Workers

Then, there is the importance of organizing the approval of one's fellow

associates; for the desire of all of us is to stand well in the eyes of those whose approval is of value. We want the emotional stimulus of sympathy; it helps to mobilize will and results in effective action. We have a sufficient body of experience now to say definitely that workers do find satisfaction in standing well in the eyes of their fellows, not alone in terms of comparative pay checks, but in terms of the quantity and quality of their work, in terms of the economy of their operations, in terms of their versatility—in short, in terms of their creative power. Moreover, it is a legitimate work of management to study how that sense of approval can be cultivated and organized in a plant.

There was, for example, an interesting experiment made at the Delco plant where they trained a dozen of the executives as guides and then routed the families of all the workers through the plant in small groups over a period of two or three months, in order that wives and mothers and children might see what it was that husbands, fathers and brothers were doing during the major part of their waking hours. It became clear that workers were proud to show how well they could work and the management claims that the production increased 5 per cent during these visits.

Fair Treatment of the Wage Problem

I cannot conclude this introductory discussion without making mention of the frequently heard comment that all the workers are interested in is the pay envelope. It goes without saying that unless wages are at the very least enough to provide a decent standard of living without anxiety, there cannot be interest in the work. Living wages

regularly paid are the first condition of casting out working class fear.

But after what I have said I hope it is clear that this idea of money as the sole incentive is an unwarranted over-simplification of human motives and human characteristics. The impulse to possession and the desire for increased financial return is indeed important, and it is legitimate. But there are other equally legitimate and important motives. The impulses to create and construct, to satisfy one's curiosity, to satisfy one's desire for the approval of others and one's sense of significance in work, are all legitimate parts of the human equipment and they demand satisfaction.

Industry has worked too long on the basis that all the workers want is wages. The thing to do now is to supply an incentive in the work itself, as well as in the rewards accruing out of the work. Admittedly, the non-financial incentives so-called, might be used to exploit the workers. But any discussion of the methods of interesting workers pre-supposes, as I have said, that the management has a disposition to treat the payment problem with reasonable intelligence and fairness.

Limitation Upon Interest

I want, in conclusion, to revert to the point at which we started in saying that our interest in securing legitimate incentives to work is a professional one. I think, if we are honest with ourselves, we have to realize that under existing conditions where the guiding motive in the conduct of so many factories is the amount of profit that can be extracted from the operation by the owners, we cannot expect to see the workers become unreservedly

and unqualifiedly interested. We can and we should do everything possible, but we cannot do all, to get interest so long as the motive of profit-making is dominant in the industrial structure. It would seem to be almost axiomatic that as between that plant where all possible profits were taken and one which publicly announced a policy of limited returns to capital, the degree of interest which it would be possible to arouse would, in the latter case, be substantially greater.

Indeed, I hope the time will come when personnel executives will publicly profess as keen an insight into fundamentals as those prominent consulting engineers, including such men as Harrington Emerson, Gantt, Scovell, Polakov, Knoeppel and others, when they submitted a memorandum to the President's Industrial Conference last fall, declaring that the "policy of extracting profit rather than rendering service has wasted enormous stores of men and natural resources and has put in places of authority those who seek selfish advantage regardless of the interest of the community."

The important reason why this policy of extracting profit has wasted human resources is that it has worked effectively to thwart and obstruct the release and free play of the constructive capacities of the workers because of insecurity of work, meager wages and no effort to wed knowledge to action.

As professional people, what we are interested in is an economic organization of our country and of our plants for use and service; and to get this we must secure everybody's interest in the work in every individual plant; to get this we must, to use a fine new

phrase, extend the stirring and appealing conception of each industry "as a great self-governing democracy of organized public service."⁵

You and I, with our professional interest in seeing a good job well done, must therefore do all in our power to make the factory a place where work can be a means of self-expression, where the worker can have reasonable freedom in choosing what he would like to do and can do well, where he can have a sense of its significance and

can secure the approval of his fellows. And where, of course, his return for the increase in output is in some measure commensurate with the increased return to the business as a whole.

And I, for one, am willing to admit that if we cannot or do not reorganize factories so that some approach to these several conditions is possible, then society will have to choose between the survival of factories and the survival of human souls. I have faith, however, that the two—machinery and personality—can continue not only to survive together but actually to flourish together!

⁵See the brilliant document published by the Garton Foundation in London, *The Industrial Council for the Building Industry*, 1919.

“ ‘More Production?’—Say, Where D’ya Get That Stuff?’ ”

By WHITING WILLIAMS

“DEES fine cool job, Buddee. Go slow—take easy—mebbe make last all day.”

This exhortation came to me in a whisper from my worker friend, Lorenzo, after the labor-gang boss had called the two of us up out of the hot and sooty checker-chambers beneath the big open-hearth furnaces and had ordered us to throw the broken checker-brick out of the cool passageway on to a low car for hauling away to the dump.

Lorenzo was only nineteen, but he had been “common labor” long enough to absorb thoroughly the “philosophy of production” which I found on the mind of the unskilled, foreign-born worker throughout the seven months of 1919 which I spent sleeping with him in the same board-ing-house bed, shivering with him outside the same factory gates, and working beside him in the same steel mills, coal mines, ship-yards, roundhouses, refineries, etc., in an attempt to learn for my company the causes of our industrial unrest.

At the present moment, certainly, few things are more pertinent than that we should know the nature of the particular thinkings and feelings about this matter of producing which happen to be operated by the worker himself. And “I’ll say,” to adopt his manner of speaking, that it is impossible to get any proper understanding of these by the use of a reporter’s pad and pencil. On the

job—that is where Lorenzo lives; that is where we must talk with him—while we warm our hands together around the salamander waiting for the half-frozen grease to melt, or down in the silent “room” by the glistening “face” of a seam of coal with our car well loaded, eating a bite out of our buckets as we wait for the mule-driver to bring in another “empty.” In such places, thanks partly to the good will shown in my partial use of several of their European languages, Lorenzo and Stephanos and Pietro and Alfonso and all my other buddies did their best to show me the ropes, even though they knew I must have made a fearful failure “som’ers” else or I wouldn’t have been with them—“No American stay long time labor gang—unless he ‘nuts’ or too much w’iskee.”

The full quota of their kindly instruction in the science of production as they see it in the labor gang was such as made me, in each plant, do less the longer I stayed—as I became better trained in what was just about the only instruction or propaganda in the place—the underground propaganda which is whispered from lip to ear as the old-timer with his shovel emptied passes in the line close to you with your shovel full:

“Ps’st! Buddee, Ps’st!—Take it easy. Don’t keel yourself! Lotsa time.”

Not a pleasant propaganda to think about in these days when all the world is fighting hard to save its life by increasing its slender store of peace-

time goods and lessening its superabundance of war-time money.

But if my months at "hard labor" meant anything at all, they meant this: Let him who would cast the first stone at Lorenzo or any other of my easy-going "buddies" follow his advice and go slow before letting fly.

In a very few weeks of work alongside of him the would-be caster would learn with what amazing naturalness that work-avoiding propaganda results from Lorenzo's surroundings on the job and off of it.

Particularly, off of it.

Probably the biggest thing which rubs out of Lorenzo's mind most of what the world tries to tell him about "more production" is the trouble he has—usually—to *get on the job*.

PROLONGED PRODUCTION A RESULT OF JOB SCARCITY

At this particular moment in 1920, it may not be hard for him to find a job, but last winter and much of last summer the country was talking about more production just as much as now. Nevertheless, at that time—when war orders had been cancelled and peace orders were coquetting in hopes of lower prices—I know that in many parts of the country it was almost impossible for thousands of Lorenzos to find work. And it wasn't a pleasant thing for him or for me to know either.

"Not a job in the house. No, nothing at all," was the way the clerk in the government employment office kept answering—like a phonograph—all of us applicants in a voice purposely loud enough to reach every one of the room full of negroes and foreigners. "Not a thing, I tell you. The ——— Company laid off three thousand

yesterday and the ——— Company five hundred this morning.—No, sir, as I just said, there ain't a job in the house—unless you're 'skilled,' then you can try across the hall."

Almost hourly my twenty-five dollars was growing smaller. I had vowed that when it was gone I'd become a bum along with the rest of them if no job turned up. Hour after hour, I shivered at plant gates with fifty or seventy-five others in the hope that one or two workers might be sick or tired and so give one or two of us a chance at their jobs in the labor gang just for the day—always in vain. It made it mighty nasty business to pass by a bunch of homeless and cashless fellow-shiverers trying to warm themselves at a fire of ties by the railroad track while I fingered my money and wondered how long I could side-step joining them.

Even among the shiverers at the gates or in the employment offices there was surprisingly little talk about Karl Marx and his idea that the world could not possibly consume all it could produce, with the consequent necessity of frequent long, desperate, hungry loafing periods. But I did hear Democrats and Republicans and every other conceivable group cursed from the bottom of men's hearts for permitting it to come about that in a world which everybody knew needed goods, men had to go hungry—and see their wives and kids go hungry—because willing muscles could get no chance to produce.

"Look at them hands! Say, ain't them good enough to make a livin' for my family, huh? But by G—I've been all over this ——— town fer a fortnight and I can't find no job

no'wures! Ain't that a hell of a country now, huh?"

All the time there may have been plenty of jobs somewhere nearby if only we could have found them. But as long as some of the biggest employers would not use the government employment offices and not all would advertise, there was nothing for it except to wander around until we stumbled—with the help of many questions in this or that saloon—on to one. No one knows the awful, the heart-sick length of even one single day when it is spent in trudgings—to save carfare—and questionings (with assurances on all sides that, "Yes, it's going to be a hell of a hard winter, all right, all right!") and applyings—all followed by turndowns and these in turn by fearings about how soon the breadline and the station-house floor and the fire by the railroad will be the only things left.

Meanwhile any effort to cover more territory by using the telephone is sure to be frowned upon—"Better be here yourself and make sure."

"More production? Humph! More hell!"

In many districts visited throughout the country all the hiring of rough labor is done at the plant gates at only two hours during the day, with, furthermore, these two hours so nearly the same at all plants that often times a fellow can make only two gates during the entire day. Still, further, whenever I tried to learn from the plant policeman or the hiring clerk where I stood the best chance, I nearly always got the same answer:

"Well, now, about tomorrow—I can't say. But you be sure to be here. Don't fail."

The bar-keep or customers could be counted on, usually, for a pretty good opinion as to the relative chances, but even at that it was usually a case of waiting an hour or so after the announced hiring hour and then getting little more than a pointed and final, "No! Not a thing!"—without, usually, even a single "Sorry" to edge it.

Many of these guards and clerks must some time have been out of a job and so have felt the dejection and the loss of self-respect which even the lowest men feel when separated from both a job and a "roll." But at most of the gates the effect was to "rub it in" that the time of the jobless man is worthless to himself and to everybody else; and the strain upon his self-respect makes him a poorer worker.

The morale of a young chap of dapper appearance, who had waited vainly for a month twice every day without any offering in his line, a skilled one, was manifestly slipping daily from his long mixing with a great crowd of fifty or sixty unskilled men, in what was called the "Bull Pen." Even if he never became a "casual" or a hobo, the company that hired him would pay for his lessened interest in producing.

"But I'm d—d sure o' one thing," he concluded his cursings as we walked away, "you won't catch me workin' myself to death when I do get in."

After so much trouble getting on to the job, the next thing Lorenzo and the rest of us had to worry about in the labor gang—it is not so much the case with the skilled worker—was the easy-going ways so many of our foremen and bosses had of putting us off of it again.

On many kinds of work experience teaches the laborer to fear each day's quitting time because it often brings that distressing verdict which starts him out again on the circuit of the gates:

"Here y' are, Joe! This'll get you your time. Won't need you in the morning!"

The more "Joe" (Lorenzo is seldom called by his right name) is exhorted to be a thrifty citizen and think about his future, the oftener he whispers as you bend together to push the five-hundred pound barrel of pitch over the gravel:

"Say, Buddee, what you tink?—Dees job he last long time? Mebbe yes, mebbe no? W'at say?"

Seldom it is that his buddy ever knows the answer, but experience teaches the wisdom of playing safe and stringing it out at as slow a pace as the boss will stand for:

"Go easy—mebbe make last all week"—(or all month or all year).

Even foremen—paid though they are to look after the interests of the company—sometimes cannot forget their days in the gang far enough to fail to have an eye out for their own and their fellow-foremen's interests by seeing to it that the work is not used up too fast.

"My G—," one of them exclaimed to his assistant as he saw that it was three-thirty in the morning, over two hours from quitting time. "Say, if we do any more on this the day foreman won't have anything to do. To hell with it, let's hit the hay!"

Needless to say, that particular kind of foreman—or at least the gang-boss under him—isn't going to worry himself too much about production and

deny himself the pleasure of putting a producer or two off the job if he can thereby manifest his authority, or perhaps reveal the innate sensitiveness of his temperament and disposition.

"Hey dere! Doan' you hear me tell you pick 'em up dose brick by hand? What? Why, G— d— you, if you doan' like dees job you know d— well what you can do!— What's dat? Say, you go get your time! Yes, right now! We doan' need you 'round here."

Not that all gang-bosses are like that, though I will say that many of them do seem to cultivate temperaments just as if they were artists—which they aren't. Often, too, it must be said for them, their temperaments come from having larger responsibilities than any man can handle and be happy. But especially where the worker is foreign-born, very unskilled, and on ten or twelve hour turns, there are too many of this type. Wherever they are, they help to give this same idea:

"More production? Say, Charlie, w'ere you get dat stuff? To hell wid it. Take easy!"

And the same query and injunction follow close after this or that boss or other representative of the stockholders shrugs his shoulders helplessly or uninterestedly when asked for a shovel with a usable handle or for a reamer that holds its cutting tool; or when he passes by and lets everybody sweat and swear in vain while the work of four men stops because the millwright won't furnish a guide to keep the steel sheets in place on the pile. The stopping lessens the earnings of two and increases the fatigue of all

four, besides lessening their belief in the management's interest in getting out the stuff.

Down in the coal mine I did my best one day to help my instructor make a record. Incidentally, I know of mighty few things that ever gave me more satisfaction than did his enthusiasm over my skill and endurance in handling my shovel and getting the coal into the cars. But it was all spoiled by the car that ran off the track and took two solid hours of pushing and jacking and lifting and crow-barring. The disappointment made me want to swear most profanely. But he was hardened to it—it seemed to be the regular thing:

"Ah've asked mony and mony's the toime for iron in place o' these wooden rails. But 'tis often and often this happens, so don't ye moind too much, me la'ad."

If a worker whose income depends pretty largely on the service the management gives him through the track-layers, the machine-men who undercut his coal so that his powder charge will find it "off its feet" and so ready to fall away to the floor, the shot-firers who set off the charge and others—if *he* can take such disappointments easily, then the man who works by the day can be pardoned if he doesn't bother as much as he would if he could get more evidence that maximum output was worrying more people.

But even the piece-rate or tonnage man feels a certain bounden and unselfish duty to his fellows not to do too much as long as workers and work are in such uncertain and dangerous unevenness as all these things indicate to him.

"I believe in doin' a good day's turn," said my eighteen-year-old "catcher" who was making his ten dollars a day—as his helper I drew only four dollars because I was on time and not tonnage. "But believe me I ain't a-goin' to be none o' your G—d——d hogs for either the work or the money."

"These d——d Greeks—the way they work themselves and their crew by grabbin' up all the sheets in sight!—Why, 'tain't hardly honest!—and yet here's the company a-puttin' 'em in ahead of us Americans."

Of course, even more definite than this fear of the work's running out before it gets fairly around the group, is the fear that speeding up and earning beyond what the management may feel a proper day's income, will bring a cutting of the rate—which will mean a harder day's effort for the same or less pay. Every such cut indicates to the worker, quite naturally, that the management is not so very seriously interested in maximum daily production.

It is this deep-down feeling that every worker has an inalienable right to some kind of a job that is behind much of the pressure for shorter hours.

"Yes," shouts the organizer at the Sunday afternoon meeting, "with men outa jobs all over the country we're goin' to go after eight hours in steel. And when we get eight hours, we're goin' after seven—if there's still men outa work."

The company is getting the comeback from this same feeling when it is given what is about the highest praise a worker can give:

"You bet, this company's blamed good for havin' work when any com-

pany has work at all and for spreadin' what work they is around so that everybody gets his share and no hoggin'. Yes, I'll say it's a great old company to work for."

It makes it look as though we people who live on salary don't get much idea of what is the most important item of all in the mind of the chap working for wages—the steadiness of his daily job.

It is true that the worker has the preferred position over the capitalist because he gets his dividends on the investment of his labor before the capitalist does—and that is an advantage which many workers do not appreciate. On the other hand, by closing down this or that department when orders are shy, when engines need fixing, or for a host of other reasons, the claims of labor may be completely side-stepped for the period, whereas capital continues to run its bill; it may have to wait and take a chance for the bill's payment, but the charge goes on and into the bill to be met some day. And every day's close-down spells the same old thing to the chaps working with the shovel and even those with the drill press.

"I'll say, Charlie, consumption'll have to have a pill or two to liven 'er up some or you and me's goin' to be out of a job—and then where'll the wife and kids be, huh?—Better go slow."

"Why only seven cars today, Andy?" called one voice beneath the lamp in a visor as we came racing down the main butt of the mine behind a galloping mule one Saturday afternoon.

"If take all damn fool coal out today," said Andy, with a glistening set of smiling teeth showing through the dark, "no can work next week."

Just that is at the bottom of the trouble in coal—there are so many mines and so many miners that if all of them worked all the time or a year they'd all be out of work for the most of the following year. And with the mine itself closed down so many days for lack of cars or orders or this or that, it is hard to get the miners to feel that they're not also entitled to go easy on the days when their maximum effort happens to be desired, seeing that the result may be "no can work next week."

So it seems to me that Lorenzo's whisper to go slow starts a lot of things, because it is the result of a lot of them. But, altogether, it looks to me as though the root of the matter lies in the steady job—that his willingness to do his utmost daily can hardly be rightly judged until the manager in whom he has the fullest confidence can contrive to tell him—as some employers are now telling him:

"We've got things fixed now so you can go the limit and if we break down or anything happens that we should have prevented, you fellows should worry—we go on with your wages—from now on nobody around here is going to be able to 'produce' himself out of a job."

The coal matter will not be fixed up properly until something like that is said to the miners even though saying it will take a lot more serious study of coal than a commission to fix wages and hours. Neither will any other line of industrial production be properly fixed until something like that is done—following a much more serious study of all the factors than any agreement as to wages and hours or even any nation-wide plan for the adjustment of superficial grievances.

I believe that what Lorenzo wants most is a steady job. It would seem as though we could all get together on that, for every manager and every capitalist I know will say that he, too, wants nothing better than a chance to give him a steady job as the result of the factory's steady operation. When these three investors of "brawn, brain, and bullion" sit down to talk about steady operation as the real down-to-the-ground essential of more production, they will probably ask us customers to sit in with them and shoulder our share of the responsibility. Those of us who insist on ordering left-handed plows may be asked to get them all of one maker so the others won't have to bother to turn out just a few. Our wives may be asked—will it be in vain?—to lessen the extremes of their styles which now over-work thousands for a short season and out-of-work them for a long one. We men may have to agree to lessen our choice of patterns so the woolen mills can give their full time to them. All of us will be asked to regularize our orders so as to regularize operation so as to regularize the job for workers who, I fully believe from observation, take more pleasure in going hard than in "taking easy," and who will give themselves the pleasure—with the satisfied self-respect—which goes with good work, if they can be *sure* of a *steady* chance at that pleasure.

Something like that kind of teamwork between all of us is about the only kind of counter-propaganda which can be expected to break down the pernicious "Lotsa time" propaganda. The pernicious type is founded on fear—fear which results from the every-day experience of men who think

little but observe much, fear which is not allayed by the economist's calm assurance that in the course of a generation or so everything will work out nicely.

But the employer isn't the only one to blame for this fear, by a long shot. The public makes the wise manager fear that he, too, may produce himself out of his position by piling up goods which a fickle consumer may leave on his hands because the styles changed over night. The wise capitalist has to fear that his "over-head" may eat up his legitimate reward if he banks too much upon a steady demand and so lifts all the risk off from his workers and puts it into his inventory. The public, if it is wise, will do its fearing when any of these three is seen to be "going easy," because fear is probably at the bottom of it and fear is sure to result from it—fear of higher prices for the consumer and fear for daily bread for the producer.

All of which is about as far as possible from our present highly popular indoor sport of trying to get things done in time to save the world from bankruptcy by sitting down and saying:

"Take it easy—what can *we* do as long as the *other* fellow is soldiering, or profiteering, or Bolshevizing"—etc., etc.

After my seven months—and my other years—"I'll say" we're all, from top to lowest bottom and back again—including the other fellow—a bunch of fine chaps—all trying to play the game pretty fairly as we understand it. If we'd only try harder to get acquainted, we'd start a counter propaganda of confidence that would turn out the stuff and make us all happy again.

Coöperation and Prices

By EUGENE H. PORTER, PH.D.

Commissioner of Foods and Markets, Albany, N. Y.

MR. ALBERT SONNISCHEIN, in his recent admirable book on *Consumers' Coöperation*, describes the essential purposes of consumers' coöperation.

First of all, the immediate purpose of consumers' coöperation is the production and supply of goods for the use of its own members primarily. To accomplish this end the necessary machinery must be acquired and set in motion; stores, factories, land, etc. All this property acquired gradually, as it is needed to supply the increasing membership, is owned collectively by the members, each having an equal share. Social partnership takes the place of private ownership; social profit takes the place of private profit. Again, the management of all the operations of the property each member shares equally. Each has a voice in the control. Finally, membership is open to all comers regardless of sex, creed, race or association. Potentially membership includes all society—it is all conclusive. Consumers' coöperation is essentially a social movement for the interests it represents and permeates all society.

SCOPE OF CONSUMERS' COÖPERATIVE MOVEMENT

Here in a nutshell is the creed, the primer and guide of the consumers' coöperative movement as taught and firmly held by its most consistent and earnest leaders. Its field is limitless, its principles are clearly defined, its purpose determined—finally substitute a new economic and social system for the old. It is not political and is evolutionary in character. When those twenty-eight weavers of Rochdale in 1843 opened their little coöperative store and formed the first real

consumers' coöperative organization they did so from stern necessity to escape the heavy burdens imposed by a ruthless economic system. Other forms of coöperation, agricultural, credit unions and banks have originated and developed for the same impelling reasons—a determination to be freed from the unreasonable exactions of the trade. The primary cause was practically the same in all the forms of coöperation, but there is a vast difference in final aims and purposes. Some of these differences will be considered in connection with agricultural coöperative societies.

The death rate among the various coöperative attempts for the past century has been always high. There have been many dreamers who perceived in coöperation a remedy for most human ills if only their particular system could be made universal. But the indifferent success or utter failure of most of these schemes has created some suspicion of the permanent stability of such enterprises. Moreover, it may be added that the history of coöperative enterprises serves to teach that the doctrine of universal brotherhood does not in itself promise either persistency of effort or efficiency in accomplishment. Is "Consumers' Coöperation" to be the solution of the problem? Is it to conquer the world's industry and write a new history of economics, or will it be simply a powerful factor in the making and distribution of wealth?

MATERIAL GROWTH OF CONSUMERS' COÖPERATIVE MOVEMENT

Before we attempt to answer these questions let us see just what the consumers' coöperative movement has done in the seventy-seven years that have elapsed since the humble beginning at Rochdale. It will of necessity be a brief record and deal mainly with material growth. It must be understood that all the local associations joined in forming a central organization, the Central Wholesale Society, and this was done in both England and Scotland; in 1843 one store and twenty-eight members; in 1913 the membership has passed the three million mark in England, or about one-fourth of the population, counting each member as the head of a household. Germany had 1,800,000 members; Russia 1,400,000; France 900,000; Austria 500,000; Italy and Switzerland each 250,000. The rest of the 10,000,000 members were distributed among smaller countries. In the same year sixteen national wholesale societies did a business of approximately three hundred million dollars.

History records the paralyzing and destructive effect of war upon all forms of established industry. Advancing from 1913 to 1918 it will be interesting and instructive to note what happened to the consumers' coöperative enterprise during that fateful period when the cause of liberty trembled in the balance and the greatest war inscribed in the annals of the world was fought to a finish. The British Wholesale Society in 1915 had its sales increase to over \$215,000,000, an increase of over \$40,000,000, or 25 per cent. The Scottish Wholesale Society increased 21 per cent. But

the total sales for the British Wholesale Society for 1918 were about \$326,000,000, and its Scottish partner kept equal pace. In fact, the volume of business of the English just about doubled during the war. The membership for all of Great Britain, now about 4,000,000, indicates an increase of one million heads of families during the war. In Germany the membership increased 450,000, while the volume of trade jumped from 493,000,000 marks to 607,000,000 marks in 1917. The Wholesale Society had its saving deposits increase from 22,000,000 marks in 1914 to 72,000,000 marks in 1917. The Hungarian Wholesale Society in 1917 did a business of nearly 88,000,000 kroner as against a little more than 30,000,000 in 1914; while four hundred and seventy societies were added and the membership increased by 300,000. A business of a little more than 45,000,000 francs was done by the Swiss Wholesale Society in 1914. The same society in 1918 had a turnover of 130,000,000 francs. It also owns and operates the biggest flour mill in Switzerland. Its membership increased from 287,704 to 324,928 in 1917. Sweden's Wholesale Society grew in the importance of its transactions from 9,900,000 kroner in 1914 to 21,800,000 kroner in 1917. The membership increased in the same period from 111,000 to 177,000. The record of Russia may be justly termed unique. In 1918 there were nearly 20,000 consumers' societies in that country, with a membership of about 15,000,000 heads of families. The Russian Wholesale Society in 1913 did a business of less than \$4,000,000; in 1918 its turnover was 2,000,000,000 rubles, which would be a billion dollars at the normal

rate of exchange. It may be added on the authority of Mr. Sonnischen to whom I am indebted for these statistics that 51,000,000, out of a total population of 76,000,000 in Central Russia are served by coöperative institutions.

Ventures in Coöperative Production

Ventures Abroad.—In addition to this narrative of increase of members and business one other important matter merits notice. It is the notable development and general success of ventures made in coöperative production. It is quite impossible to enumerate all the various fields of industry that the British Wholesale Society alone has entered. Suffice it to say that it has five clothing factories, eight great flour mills, some of the largest in the world, great soap works and nearly a hundred other lines of manufacturing. It also has creameries in Ireland, tallow and oil factories in Australia, bacon factories in Denmark, great tea plantations in Ceylon and India, wheat fields in Canada and a fleet of ships upon the sea. So much for coöperative effort and growth across the sea. It may be frankly admitted that these figures are somewhat staggering. Should such a growth continue, coöperation will complete its conquest of Europe within the next ten years. However, it is very doubtful if any such rapid advance is made. In the judgment of many keen observers the movement will inevitably develop well defined limitations which will be difficult, if not impossible to pass. Moreover, the great size the organization, as already attained, will force to the front some very troublesome and momentous questions which may involve in their settlement the

very existence of coöperation on any large scale.

Ventures in the United States.—For the United States the tale is much shorter. Consumers' coöperation has advanced falteringly in this country, although singularly enough in 1844, about the time the Rochdale pioneers started, a tailor in Boston originated a coöperative buying club, which a little later became the first coöperative society in the United States. It is difficult, if not impossible, to give an idea of the present status of coöperation here by means of figures. Reliable statistics are not available, but there are now listed some 3,000 American coöperative societies, most of which are probably in existence. But these are not all simon-pure consumers' organizations. There are centers of activity in California, Illinois, Minnesota, Wisconsin, Pennsylvania, the Dakotas, Oregon and in New York, the home of the Coöperative League of America. We have not much to show compared with results abroad, and the future development of the American consumers' coöperative movement is difficult to determine. However, I believe it is firmly rooted here; is sure of a steady and sturdy growth and will become, in time, an important and influential factor in our industrial life. With some trepidation I will venture the statement that it hardly seems probable that it will either advance as rapidly or be able to reach, at least within the near future, a position of such authoritative power and influence as has been possible for some of the societies over the sea. The conditions here are very different from those existing in the old countries. Our habits and ways of thought, and house-

hold customs are different. Then, too, this is not a "tight little island" but the sweep of a continent across thousands of miles; our population as a whole is not compact; we are not as homogenous a people as some other nations; our thousands of farms create a strong and increasingly powerful agricultural interest and finally we do not, like England, import a large proportion of our food. These are some of the reasons why it seems to me that the consumers' coöperative movement in this country should be studied with very special reference to its relationship to other forms of coöperation. This is absolutely essential if we are to get anywhere in the attempt to better present trade conditions. It is true that Sonnischen insists that pure consumers' coöperation cannot endure matrimony and must always trot in single harness, but while that may be very logical it is not always expedient to push logic too far, because, if consumers' organizations are not yet as vigorous as we might wish, there is a form of coöperation that is growing here with phenomenal rapidity and already possesses the proportions of a young giant. The name of this lively youngster is Agricultural Coöperation.

AGRICULTURAL COÖPERATION

The troubles of the farmer have been, in a great measure, those affecting the consumer. Unorganized, he remained isolated, helpless and unprotected at the mercy of selfish and thoroughly organized interests whose operations, although of a semi-public character, are generally unregulated. It will hardly be disputed that at the present time industry is completely

dominated by large aggregations of capital. This thorough organization and equipment of business with increasing legal protection are gradually eliminating competition. But capital has not concentrated on agriculture. Therefore, it is inevitable that the problems created by this concentration and power of capital and its relationship to all concerned have become the leading questions of public policy. The most serious questions that confront us today are no longer political, they are mainly economic. With the growth of cities and towns came a steadily increasing demand for the products of the farm and it is of the greatest importance to the prosperity and welfare of us all that the distribution of these products shall be accomplished with the greatest possible efficiency and with the smallest possible cost. Experience has shown that the existing agencies, free from control, are likely to become predatory and exploit both producer and consumer. The farmer has a deep-seated conviction that acting alone and single handed he pays the highest price for what he buys and gets the lowest price for what he sells, and it must be admitted that the evidence sustaining this opinion has not been controverted. For years the farmer has felt that there was too great a difference between the price paid the producer and the price paid by the consumer. For many years earnest and sometimes violent efforts have been made to improve agricultural conditions with failure as a result, because of lack of adequate comprehension of the economic and social questions involved. As in other forms of coöperation, many organizations styled coöperative were

formed, led brief, precarious lives and ceased to be. Few of these enterprises were founded on right principles and many of them tied up with moral, social or political questions. Many were formed by impractical zealots, full of ardor but lacking sense. But much was learned from these failures, costly as they were. One important lesson was that business principles and not sentiment must control, and that the doctrine of brotherhood does not in itself constitute a stable foundation.

Coöperative Business Methods Essential to Farmers

It became apparent that coöperative business methods for farmers are essential if they are to hold their own in the broad field of national economy. This implies at once the ability to continue with others for desirable purposes impossible to be reached by an individual. So within the past twenty-five years agricultural coöperation has entered upon a career that at this time seemed to promise a most signally successful accomplishment. But it is well to remember that although great progress has been made it is like consumers' coöperation abroad, not yet entirely escaped from the experimental stage. Its record of achievement shows the organization of the citrus fruit growers of California, the potato growers of Maine, Maryland and other states, the apple men of Oregon, the melon raisers of Colorado, the cheese and butter makers of Minnesota, Wisconsin, Iowa and a score of other states, the onion growers of Texas, the wheat men in the great wheat area, live stock associations, breeders' associations, dairymen's

leagues, cow testing associations, egg associations, fruit growers' societies and societies for buying supplies. All these run up to very many thousands of organizations doing a yearly business of hundreds of millions of dollars. One striking organization is the farmers' union with societies in twenty-three states and a membership in 1917 of over 3,000,000. It then owned 1,600 warehouses in the southern states for cotton alone.

This outline of achievement, even if brief and inadequate will, however, give a pretty definite notion of the magnitude of the business controlled or directed by agricultural coöperation. Moreover, it must not be forgotten that Rochdale principles of operation largely govern the great majority of these organizations.

Comparison between Consumers and Agricultural Coöperation

These two great divisions of coöperation, consumers and agricultural, are identical in purpose when engaged in the business of buying commodities for distribution among members, but when agricultural societies act as collective selling agencies the lines diverge. The consumer in buying collectively aims to eliminate the expense and profit of the middlemen, and even of the manufacturer when possible, and thereby reduce the cost of living. In other words, he proposes to add to his savings the eliminated profits. The agricultural societies, in collective selling, desire to obtain a fair price for their products and to reduce the expense and profit of the middlemen to reasonable proportions and so to add a decent amount to their savings. Both desire to increase in-

come—the one by collective selling the other by collective buying.

So far as figures are available it seems probable that the agricultural coöperative societies have in some cases reduced the price to the consumer and at the same time improved the quality. In other cases where the price has increased, the quality has become standardized, and in all these cases the goods have moved through the ordinary channels of trade. There has been little direct dealing as yet between producers' and consumers' societies. One of the distinct advantages to the consumer is the ability of producers through organization to ship goods of uniform quality and standard grading. Producers are now ready in many cases to deal directly with consumers. It is one of the ways out. Harris says, "What consumers need to do is to assure control of the final steps of distribution and

manage them in their own interest as efficiently as these producers are conducting the initial stages of distribution. Moreover, to worry about what will come to pass when producers finally join issues at the halfway point between source and destination of products is to cross a bridge which is a very long way off. Meantime, consumers can afford to bid Godspeed to coöperative producers."

COÖPERATION AND THE INDUSTRIAL SYSTEM

Our present business methods will continue with coöperation in its various forms. As the strength and growth of coöperation continues it will exert an ever increasing influence on the industrial system and the greater the power the greater the corrective influence will be. Coöperation is of the very essence and spirit of true democracy and it can never die.

Plans for Extending Coöperative Buying and Selling in the United States

By O. S. BEYER, JR.

Mechanical Engineer, New York and Washington, D. C.

THE promotion of the All-American Farmer-Labor Coöperative Commission by the progressive labor and farmer organizations is the outcome of a growing conviction on the part of these influential groups that there is little hope of bringing down the cost or improving the standard of living for the large mass of workers and farmers by the conventional methods advocated by the spokesmen of the existing order. The unions and societies which are behind this national coöperative movement are organized primarily for furthering the economic interests of their members. In the past their concern has been largely with securing a fair return for their produce, whether hours of work or bushels of corn. Long and bitter experience, however, has taught them that the present economic system works in such a way that the increases in the returns which they are able to secure for their commodities invariably lag behind increases in the prices of necessities. They have become convinced that either radical changes must be made in the prevailing economic system or a new kind of system built up before forces are created which will bring about a gradual reduction in or stabilization of prices.

The organizations supporting this commission attribute the existing price tendencies directly and indirectly to the necessity of maintaining a margin in the form of interest, dividends or

profits in all undertakings which render a service to the people, whether financial, commercial or productive. The motive behind this necessity, they maintain, fosters, among other ills, a continuously growing economic overhead. The non-producers of society are growing at the expense of the producers. In other words, the competitive system is becoming commercially top-heavy. As it does so, the scramble for as large a profit margin as possible becomes more and more intense. The main purpose for which individuals and groups really work, the production and distribution of the necessities of life, they maintain, in the present scheme of things, becomes secondary in importance, providing it is not entirely perverted. As incontestable evidence of this tendency, they point, for instance, to activities similar to that of the Sheffield Farms Company, a milk distributing agency of New York City, when it urged the farmers to limit milk production, in order, it seems, that prevailing price levels be not disturbed. The frequent wasteful disposal of food products for the sake of maintaining prices, the pressure brought to bear on the War Department not to dispose of its surplus food stocks, the immediate pyramiding of commodity prices to the final consumer when relatively small increases in the cost of labor per unit of production become necessary, are all marshalled as proof that a

thorough revision and redistribution of responsibility for the functions of our economic system are in high order. They are convinced that a new motive must replace the present profit motive of our commercial, agricultural and industrial activities.

WORK OF ALL-AMERICAN FARMER- LABOR COÖPERATIVE CONGRESS

Elimination of Profit Making

This new motive they conceive to be direct non-profit service. They propose to foster it by coöperative methods. The element of profit-making in the transactions of men and their organizations must be eliminated.

As the first step in the process for bringing about the desired object, the combined organizations supporting the commission convened the All-American Farmer-Labor Coöperative Congress in Chicago, February 12, 13 and 14, 1920. This congress was composed of delegates from labor, farmer, and coöperative organizations all over the country. It heard addresses and committee reports and engaged in discussions of all the important phases of the coöperative movement.

Organization of Credit Unions

In the interest of coöperative financing, banking and credit, the committee on this subject specifically recommended the establishment of credit unions and workers and farmers' coöperative banks, as the inaugural movement for gradually securing proper control of credit. The formation of these credit unions and banks is to be entirely in response to local requirements wherever they arise. These institutions are to be used for meeting the credit needs of new and going coöperative enterprises, and of

farmers and workers who need help to get established or to improve their usefulness. Further, the committee proposed that the existing banking laws and regulations of the various states and the nation be followed in the establishment of these banks, except that they be organized on a strict coöperative basis, and that the interest returns be restricted to the lowest possible, 6 or 8 per cent. In states where the organization of credit unions is not possible, owing to existing legal limitations, the committee advocated the passing of laws lifting these restrictions.

The extent to which these individual banking enterprises should eventually link themselves together for wider coöperation and control of the national credit was not widely discussed. It was recognized that the interrelation of individual coöperative banking institutions had to be a distinct growth and could not very well be predetermined at this early stage of coöperative finance.

Principal Phases of Coöperative Distribution

The next set of reports and discussions had to do with the principal phases of coöperative distribution. They dealt with the principles and details in the organization and management of coöperative wholesale and retail stores. The Rochdale system of coöperative stores was indorsed. A rather rigid system of bonding and supervision was also advocated to insure against the possibilities of profit making in the coöperative distributing machinery. Particularly was the importance of developing methods of direct trading pointed out.

Action was taken, looking to the systematic development of this phase of the movement.

Revision of System of Industrial Management

The commission and the congress further recognized that the entire system of control and management of industrial establishments under coöperative enterprise will have to be revised. The capitalistic control of industry has developed a type of industrial management which is distinctly militaristic and autocratic. If the maximum is to be secured by way of the greatest possible efficiency and economy in production, then coöperative industrial establishments must be so administered that the workers in these establishments become a genuine part of the living organisms which actuate them. The farmer and labor organizations are clearly aware of the vast savings which become possible when the full interest and thorough coöperation of every worker in industry is secured. They see that these savings can only then be secured when the status of the individual worker is changed from that of a mere wage earner to a coöperative producer, working in a democratically controlled plant. So they most seriously considered the new type of democratic industrial management which must be devised for the control and administration of coöperative factories, large stores, packing plants, mines and similar centers of operation. The congress authorized the creation of a committee composed of technical experts to study this subject and, if possible, to supervise a development endeavoring to embody the fundamental principles involved.

Education, Publicity and Legislation

The subjects of education, publicity and legislation, as required for the adequate promotion of the movement, were also discussed. It was clearly recognized that sound education and stimulation were of basic importance to real success. Provision for accomplishing these particular purposes was made.

FUNCTIONS OF ALL-AMERICAN FARM LABOR COÖPERATIVE COMMISSION

It is not intended that the work of the commission is to find expression only in the transactions of the annual congress. One of the most important actions agreed upon concerned the organization and permanent administrative functions of the commission. The functions which it is hoped will gradually be assumed and developed by the business organization of the commission include the active guidance, coördination and supervision of all types of coöperative enterprises. The necessity for assuming a measure of responsibility for such activities is in response to a spontaneous demand which has arisen as a result of the many individual and isolated coöperative enterprises already started. It is expected that these administrative and supervisory functions will be analogous to the functions performed for the present capitalistic financial and distributing system by such agencies as the different credit rating houses, bank clearing houses, produce exchanges, boards of trade, and chambers of commerce.

The conclusion should not be reached that these farmers and workers propose to set up an economic system absolutely independent of and unrelated

to the capitalistic system as it exists and functions today. If any such attempt were made, it is quite certain that it would fail. Rather is it proposed to start coöperative enterprises, stores, banks, and shops, in a small way and in response to local needs in environments which presage, by their characteristics and the temper of those who are to be served, a reasonable prospect of success. The inhibition and limitations imposed by the prevailing system are recognized. However, the coöperative movement cannot ignore them, but must, in its evolutionary stages, adjust itself to them. The modifications in social psychology, which are necessary before the movement can have an appreciable effect on the costs and standards of living, must be slow and genuinely a part of the masses who are to be benefited.

Furthermore, the business-like and systematic approach to the many problems which present themselves for solution reveals that there is not only a thorough realization of the size of the job but also that there is a thorough understanding of the fundamental differences in the new economic system with which it is gradually hoped to replace the old. The necessity for and great importance of the technical expert to help in the inauguration and management of the many phases of the movement were repeatedly emphasized in the reports and during the discussions of the congress. The representatives of the workers and farmer organizations delegated as the officers of the commission are quite similarly aware of this, and in their detailed plans for the business organization they are not

overlooking the functions of the skilled adviser and manager.

It is, of course, too early to state what effect an attempt at a concerted movement such as this one, inaugurated by the progressive wings of the farmer and labor organizations, will have on the levels of commodity prices. There are, today, many individual coöperative enterprises under way. They have mostly been organized by labor and farmer organizations. They are all working practically independent of one another. Many of them are distinctly successful, others are managing to keep going, while some are having serious difficulties.

SERVICE VERSUS PROFITS

As it becomes possible to coördinate these individual attempts, the coöperative movement will of course extend farther and farther into the outlying realms of distribution and production. With the ideal of service substituted in place of that of profits, distinct forces will be released which should have an ever increasing effect on price tendencies. If the growing popularity of the coöperative movement, undoubtedly stimulated largely by the existing chaos in commodity prices, is any sign, if the business-like approach to the entire problem of bringing about the national promotion and coördination of coöperative finance, distribution and production by the labor and farmer organizations is an indication it should not be unwarranted in concluding that this movement holds out about as much hope as any so far inaugurated to reduce the cost of living and eventually make possible improvements in the standards of living.

Foreign Exchange, Prices and the Course of International Trade

By JOHN H. WILLIAMS, PH.D.

Princeton University, Princeton, N. J.

FROM July 1, 1914, to December 31, 1918, the United States exported \$22,974,000,000 of merchandise (and silver) and imported \$11,166,000,000, giving an excess of exports amounting to the sum of \$11,808,000,000, an average of \$2,624,000,000 a year. This huge balance, in four and a half years of war, is equal to the sum of our annual trade balances from 1873 to 1914.¹ Our enormous exports were due to two interrelated causes, the war demands of Europe² and the

great rise of export prices.³ After the armistice, our excess of exports continued without abatement, despite the unpegging of the exchanges in the spring of 1919 and their subsequent pronounced depreciation. The calendar year 1919 showed exports of \$7,922,150,000 as against \$6,143,392,000⁴ in 1918, and imports of \$3,904,-

¹ Excess of exports, 1873-1914, \$11,754,-849,000.

² During the fiscal years, 1914-19, Europe took of our total exports the following percentages, 63, 71, 69, 69, 63 and 64. Of these exports to Europe the following percentages were taken by our four principal Allies—the United Kingdom, France, Italy, and Belgium: 60, 75, 82, 79, 93, and 85. During the same period the United Kingdom alone took from 40 per cent to 53 per cent of the total exports to Europe. The following figures show our trade balances with our principal Allies in recent years, as compared with 1913, the first full year before the war. The figures are for calendar years.

EUROPE

	1919	1918	1913
Exports.....	\$5,185,980	\$3,858,705	\$1,499,572
Imports.....	750,569	318,127	864,986
Excess of exports.....	\$4,435,410	\$3,240,578	\$634,586

UNITED KINGDOM

Exports.....	\$2,279,178	\$2,061,300	\$590,732
Imports.....	309,189	148,614	271,954
Excess of exports.....	\$1,969,988	\$1,912,686	\$318,778

FRANCE			
Exports.....	\$893,368	\$931,199	\$153,922
Imports.....	123,871	59,509	138,933
Excess of exports.....	\$769,497	\$871,690	\$14,989
ITALY			
Exports.....	\$442,676	\$492,145	\$78,675
Imports.....	59,048	24,340	55,322
Excess of exports.....	\$383,626	\$467,805	\$23,353

³ The following comparison of indices of export prices for 100 articles, quantity and total value of domestic exports, shows that the increase in our exports was much more an increase in values than in quantities:

INDEX NUMBERS

	Quantity of Domestic Exports	Export Prices of 100 Articles	Value of Domestic Exports
1915.....	122	101	123
1916.....	157	122	191
1917.....	171	163	279
1918.....	125	210	261
1919.....	140	227	317

(See W. A. Berridge, Analysis of the Merchandise Exports from the United States, *Review of Economic Statistics*, October, 1919, p. 312.)

⁴ This figure does not include exports on government account to the American Expeditionary Force.

406,000 as against \$3,031,304,000 in 1918, giving a favorable trade balance of \$4,017,744,000, the largest in the history of the United States. Prior to the entrance of the United States into the war, and before the imposition of the European gold embargoes and the various arrangements for exchange stabilization,⁵ these enormous merchandise balances induced an unprecedented drainage of gold from Europe to the United States, the net excess of our gold imports to December 31, 1918, being \$1,029,000,000. Concurrently with the diminution of gold holdings⁶ in the European belligerent countries went an astonishing

increase in their paper money in the shape of inconvertible notes. The increase (inclusive of Russia) has been about twenty-fold.

In consequence of these abnormal conditions—our huge trade balances, the drain of gold from Europe, the gold embargoes, the large issues of paper—Europe⁷ was for the greater part of the war, and still is, off the gold standard, and we have in the European exchanges a condition of “dislocated exchange.”

This situation brings up for renewed discussion a fairly familiar problem, which has been considerably talked about of late, but of which there has been comparatively little study of a statistical character—the problem of international trade under a régime of depreciated inconvertible paper money. How, under conditions of inconvertible paper money, do changes take place in exports and imports? The answer to this question involves a consideration of the relation between the foreign exchanges, prices and the course of international trade.

INTERNATIONAL TRADE AND MONETARY SYSTEMS

Gold Standard Countries

We may best state the problem by first reviewing, briefly, the normal case for gold standard countries. Summed up baldly, the bases of the usual statement of the theory of international trade and foreign exchange are as follows:

1. The trading countries are on a gold basis.

⁵ Of the arrangements for exchange stabilization, the mobilization of American securities in Europe for that purpose, the series of private loans directed to the same end (of which the Anglo-French loan is the most familiar) and the subsequent direct advances by our government to the Allied governments, it is unnecessary to speak in detail in the present article.

For a detailed statement of our war-time balance of international payments, inclusive of the “invisible” items, see my article on “The Balance of Trade of the United States,” *Review of Economic Statistics*, July, 1919 (co-author with C. J. Bullock and R. S. Tucker).

For an analysis of our war-time trade and exchange relations with Latin American countries, see my article on “Latin American Foreign Exchange and International Balances During the War,” *Quarterly Journal of Economics*, May, 1919, pp. 422-65.

For an analysis of our balance of international payments in the calendar year 1919, see my article on “The Future of Our Foreign Trade: A Study of Our International Balance in 1919,” *Review of Economic Statistics*, April, 1920 (co-author with Frank A. Vanderlip).

⁶ Curiously enough, however, in spite of the heavy depletion of the total gold stocks in the European belligerent countries, the gold reserves held by their banks actually increased by about one-third during the war—from \$4,660,000,000 to \$6,245,000,000—owing to the concentration in these banks of gold formerly in circulation,

etc. (See the *Financial and Commercial Review of the Swiss Bank Corporation* for 1918.)

⁷ Except in the neutral countries.

2. Through the mechanism of the "gold points," gold flows freely between the trading countries.

3. When gold flows out of a country the level of prices within that country falls and, in consequence, exports increase and imports diminish; and conversely, when gold flows in, the price level rises, so that imports are encouraged and exports discouraged.

Given this mechanism, a disturbance of the balance of international payments, as for example, an increase in borrowings, will set the machinery in motion and effect a change in the merchandise imports and exports.

For example, let us imagine an interesting, though of course impossible case. Abstracting from other factors, let us imagine what would have happened, according to theory, had Europe remained through the war on a gold basis. Our large favorable balance of payments, in which the heavy merchandise exports were, as said, the dominant item, would have turned the exchanges against the European belligerents. The excessive supply of bills in New York, representing the exports, would have driven sterling, for example, to a discount—to say 4.83. It being cheaper, at that rate, to ship gold and bear transportation, interest, and insurance expense thereon than to sell sterling bills at the discount, gold would have flowed from England to the United States, prices would have fallen in Great Britain and risen in the United States. Under these changed price conditions England could export more than before and the United States less.

Only to state the case shows how impossible it is, and illustrates how little application a theory of normal

trade has to such abnormal conditions as those which obtained in the late war. Europe *had* to continue to buy from us. The drain of gold, far from lowering the European price levels, was accompanied by rapidly rising prices. Then came the cessation of gold exports from Europe, the abandonment of the gold standard and a still further elevation of prices—this time of *paper* prices. Throughout, our heavy exports continued, despite rapidly rising prices here, and despite the depreciation of exchange—exports for which Europe could not pay, except with credits out of the pockets of the United States to the sum of about \$10,000,000,000.

Even today, the situation is but little changed, though of late months our exports show some indications of falling off, and European exports, at least those of Great Britain, show most hopeful signs of recovery. Eventually, however, the trade balances will be righted. This has been so freely, and for so long, predicted as scarcely to require detailed exposition. It is not to be expected, however, that, except perhaps in the case of Great Britain, there will be a return to the gold standard in the immediate future. How, then, are these trade changes to take place?

German Reparation Payments

We have to ask ourselves the same question with regard to the German reparation payments and their effects upon international trade. Germany is to make payments which will amount, when fully assumed in 1926, to about \$750,000,000 a year. Such large remittances will undoubtedly dominate the German balance of

payments and result in a great expansion of German merchandise export and a large excess of exports over imports. In other words, Germany will make the reparation payments with the only means at her command—with goods. But Germany is suffering a régime of depreciated paper. With some 50,000,000,000 marks of paper notes in circulation and the mark exchange at about one cent, it is not to be expected that Germany will resume the gold standard for at least a considerable period.

Effects of Exchange Depreciation

How, then, in all these cases, with the usual gold points of exchange, gold movements, and the consequent changes in price levels which in the theory for gold countries bring about trade changes, are these large changes in exports and imports to come about? The answer to this question has usually been that depreciating exchange operates as a "bounty" to exporters (of the country whose exchange is depreciated) and as an added burden upon importers. The question as to just what constitutes this bounty and this burden has presented great difficulty, and has called forth various solutions. The exporter, it is said, receives payment in the form of a foreign bill calling for foreign gold money. Let us say he is a German exporter to the United States. He receives for his goods a bill in dollars. This bill he sells for marks. With marks at one cent he gets 100 marks per dollar, instead of about 4 marks, as when the mark was at par.

This answer is, of course, the superficial one. It implies that the goods to be exported cost nothing in Ger-

many, or at least no more than before. The explanation of the theorist, therefore, has usually been somewhat different. His explanation has usually been that when a country's exchange is depreciating, the depreciation of the exchange keeps pace with the depreciation of the paper currency in terms of gold, that is, with the gold premium, but that a gap appears between these two and the general price level. General prices do not rise so fast as the gold premium or rate of depreciation of exchange, so that the exporter buys in Germany at the general price level and sells to us in dollars, converts his dollars into marks, and secures an extra profit or bounty, measured by the gap between the general price level and the rise of the gold premium, or extent of depreciation of the mark in exchange.

International Price Levels

General Price Levels and Depreciating Currency.—But this answer still presents difficulties. With expanding exports and increased supplies of exportable products being sought for export, do the prices of exportable products remain only on a par with the "general price level?" The "general price level" is made up of numerous items. It contains both export prices and domestic prices. What would interest the exporter, in this comparison as stated would be not the "general price level," but export prices. How do these compare with the gold premium and the exchange rate? Taking account of this distinction, a refinement of the original statement has been put forth, namely, that while export prices do tend, under conditions of depreciating paper, to rise higher

than the "general price level," they do not rise so high as the premium on gold (depreciation of exchange), so that there still remains a "gap"—this time between the prices which the exporter pays for his goods and the value in marks of his bill of exchange in dollars. This "gap" constitutes an extra profit or bounty to the exporter.

These are representative views of those who hold that depreciating paper currency stimulates exports and discourages imports. On the other hand, there are some who have contended that depreciating paper has no such effect. To cite one distinguished example, J. M. Keynes, as a result of his investigation in India, denied that depreciation of the Indian exchanges operated as a bounty to exports.

General Versus Specific Depreciation.—Professor J. Shield Nicholson, the British economist, endeavors to reconcile these conflicting opinions, and ascribes the difference of views to the failure to distinguish between what he terms *general* depreciation and *specific* depreciation. To quote from his recent book *Inflation*:⁸

The general rise of prices in this country (England) is the same thing as a general depreciation of the pound sterling. . . .

Under normal conditions of trade, the general levels of prices in the different countries, that are effectively on the gold standard, tend to conform to the general world level of prices. There are, of course, differences owing to cost of transport, tariffs and the like, but there is a general conformity.

If in any one country prices were to rise to an exceptional degree, that would amount to a general depreciation of its currency compared with gold—the standard of world prices. Imports into this high-priced country would in-

crease, exports would fall off and there would emerge an adverse balance of trade. This adverse balance might be met for the time by the export of gold or of securities, or by borrowing abroad, or by deferred payment, etc., but if the cause persisted, if the price level of the country in question remained relatively high, then its currency would fall below the par level with other currencies. That is to say, the *general* depreciation would be followed by or associated with a *specific* depreciation. The specific depreciation is measured by the fall in the foreign exchanges.

It is Nicholson's view that this difference between the *general* depreciation and the *specific* depreciation would operate as a stimulus to exports and a discouragement of imports.⁹

World Price Level.—Upon Nicholson's statement of the matter two comments may be made. In the first place, his phrase "the general world level of prices," and his characterization of the "general levels of prices in the different countries" as tending "to conform to the general world level," barring such minor differences as cost of transport and the like, appear to me unhappy for his purpose, because capable of an interpretation which he perhaps did not intend. It is true that there is a world level of prices in the sense that at any given time the price levels in different countries stand in a certain relation to each other, and that, given the free flow of gold, the stocks of gold coming annually from the mines tend, theoretically, to distribute themselves among the countries of the world in accordance with the shiftings of their balances of international payments and with the play of reciprocal demand. The phrase "world level of prices," however, con-

⁹ For his fullest and clearest statement on this point see *The Economic Journal*, December, 1916, pp. 429-30.

⁸ London, 1919, pp. 69-71.

notes, for me at least, a tendency of national price levels to conform to an equality, a connotation which unhappily is strengthened by Professor Nicholson's allusion to the minor differences due to the cost of transport, tariffs and the like. It is a commonplace observation that before the war, to take a normal case, the price levels of different countries were widely divergent, and that they had been so for generations. The price level in the United States was higher than that of England, that of England higher than that of Germany and that of Germany higher than that of Italy. These differences were not of so slight a character as to be ascribable merely to differences in cost of transport. They came about, moreover, by reason of that same free flow of gold, and in response to those same shiftings of international balances and the play of reciprocal demand which have been mentioned as governing international price levels.

Factors Governing International Price Levels.—The reason for these enduring differences may be easily illustrated. Suppose that there *were* a general world level of prices, and a general balance in the trade between nations, so that in every country exports exactly paid for imports.¹⁰ Suppose, then, an increase of demand in England for United States tin plate. The trade having previously balanced, this additional export would be paid for by a flow of gold to the United States.

¹⁰ For purposes of exposition, I abstract from other, "invisible," items in the balance of payments, supposing trade to consist solely of merchandise. I abstract, too, from the various banking devices to limit gold flow to a minimum, the object of the illustration being to state a fundamental principle in the simplest terms.

The added gold would raise our price level and lower that of England. In consequence, there would be a gradual stimulation of imports from England (the lower-priced country) to the United States (the higher-priced country), and a gradual check of exports from the United States to England (other than the new article) until the trade between them again came to an equality. Then the flow of gold would cease. But there would no longer be a general world level of prices. England, by the loss of gold, consequent upon the new demand for tin plate, would have a permanently lower price level, the United States a permanently higher price level than before. An obligation to make other payments than those for merchandise would have similar results. If a country has to make remittances abroad—for tourists' expenditures, immigrants' remittances, interest on foreign capital previously invested—it must make the remittance—its international payments having previously balanced—in money. The flow of gold leads to a flow of goods, so that the payments are made ultimately by an increase of exports and a diminution of imports. But the process which brings about these changes in trade is one of lowering prices and incomes in the remitting country and of raising them in the creditor country.

Prices: Domestic and International.—Before leaving this matter of general world price level and national price levels, it should be said that here, as in the discussion of a paper money régime above it is necessary to distinguish between the two sets of prices that enter into the general price levels of nations—between the prices of

domestic goods and the prices of international goods. As we shall presently see, regarding the staple products that enter into general world trade, it is indeed true that they tend to conform to a general world market price. Wheat of the same grade, for example, sells at approximately the same price in Liverpool, whether it be exported from Argentina, the United States, or Russia. These form only a minor part of the general price level, however, and do not destroy the force of the general statement that there are wide and enduring differences in national price levels.

Causes for Trade Changes.—It will be observed, by reference to the quotation from Professor Nicholson's book, that the foregoing discussion of price levels is based on the assumption that the trading countries are on the gold standard. The rise of prices in a country, such as would induce normally an increase of imports and lead to an outflow of gold or securities, is what Nicholson calls *general depreciation*. But if the cause persisted—if the price level remained relatively high, and the deficit in the balance of payments and the drain of gold continued, there would come finally a breakdown of the gold exchange mechanism. The depreciation of exchange, instead of being confined within the narrow limits of the gold points, would become more violent, and the currency of the country "would fall below the par level with other countries." "That is to say, the *general depreciation* would be followed by or associated with a *specific depreciation*. The *specific depreciation* is measured by the fall in the foreign exchanges."

It is the difference, the "gap," as we

have called it, between the *general depreciation* and the *specific depreciation*, which serves as an extra profit or "bounty" to exporters and an added burden upon importers, and thus brings about an increase of exports and a decline of imports. Without stopping to examine the aptness of Nicholson's distinction between *general* and *specific depreciation*, his explanation of trade changes under a régime of depreciated paper is clear. Translated into the terms we have previously used, it is that under depreciating paper currency, the depreciation of exchange (rise of premium on gold) outstrips the rise of the general price level. The "gap," therefore, is the same one which has been set forth by other theorists. It does not even contain the refinement upon this general view that we have mentioned, namely, the distinction between the prices of domestic goods and the prices of international goods, and the comparison of the depreciation of exchange with these latter, instead of with the general level of prices.

GOSCHEN'S THEORY OF FOREIGN EXCHANGE

Over-importation.—Before stating our own view of the problem, we may be permitted to make one further reference to the writings on the subject, namely, to Goschen's analysis.¹¹ Goschen 'sets forth as a characteristic phenomenon the case of over-importation associated with excessive issues of paper money and depreciation of foreign exchange. He finds among these phenomena a causal connection which he states as follows:

¹¹ Goschen, G. J., *The Theory of the Foreign Exchanges*, 1901 edition.

Probably there are as many cases in which the depreciation of the currency is directly or indirectly the consequence of excessive importations as there are cases in which it is due solely to the errors and bankruptcy of governments. Often both influences are combined, taking alternately the position of cause and effect. Sometimes governments, simply for their own purposes, issue a quantity of paper money; the natural consequence will be over-importation; prices will rise in consequence of the increase in the circulation and accordingly attract commodities from other markets, while the exports having risen also in price will be less easy of sale abroad. Or, over-importation takes place in the first instance, and governments, in order to remedy artificially and apparently what can only be remedied by the cessation of the real primary cause, commit the fatal error of increasing the circulation by an issue of paper money. They think thus to increase the means of paying the debts that are being incurred; but the only effect is still further to increase the evil, *for importation instead of being checked is fostered by such a plan.*¹² Italics mine.

Goschen's analysis is endorsed by Nicholson, who says that it "exactly describes our present case." After saying that Great Britain is suffering from over-importation, and admitting that "the imports from America were necessary for the conduct of the war," he adds: "But an increasing part of the aggregate money value of these imports was due to the inflation of the currency and the associated rise in prices."¹³

Difficulties of Nicholson's and Goschen's Theory of Exchange Rates

To the writer, these passages are of especial interest as showing the failure to distinguish consistently between the theory of international trade applicable to gold countries, and the theory which is applicable under conditions of depreciated paper. The crux of these

passages is the declaration that rising prices encourage imports and discourage exports. But this is the orthodox explanation for gold standard countries, whereas both Goschen and Nicholson are applying it to countries with inconvertible paper currency and depreciated exchange. Moreover, this explanation runs directly counter to Nicholson's own earlier view that "specific" depreciation (the condition of depreciating currency and exchange) stimulates exports and discourages imports. In the case of both writers, the confusion is apparently due to the fact that they have witnessed the concurrence of the phenomena to which they ascribe a causal relation—namely, the concurrence of heavy importation, depreciating paper currency and exchange, and a rising price level. But this association, when it has occurred, has been *in spite of*, and not because of depreciating paper and the consequent rise of prices. Few would agree with Nicholson, for example, that during the war the heavy importations of Europe were induced and encouraged by the rising paper price levels and the depreciating foreign exchanges. These importations occurred in spite of the unfavorable exchanges, and in spite, too, of the fact that Europe was unable to make payment, except in credits advanced by the United States. They are sufficiently explained by the necessities of war and of reconstruction. In proof, we have the decline of European imports in recent months, a decline which is quite generally associated with the fall in the European exchanges which became so pronounced last January.

Goschen's analysis, of course, is not concerned with war conditions, yet the

¹² Goschen: *The Theory of the Foreign Exchanges* (Ed. 1901), p. 73.

¹³ Nicholson, *Inflation*, p. 74.

criticism to be made of it is essentially the same. The concurrence which he noted between expanding imports and depreciating paper is to be explained as taking place not because of the rising price level, but in spite of it, and from a quite different cause. A paper money régime is frequently accompanied by a wave of foreign capital borrowings. Under the stimulus of rising prices there is likely to develop a fever of land speculation, railroad building, or some other avenue of speculative expansion by which foreigners are tempted to make investments of their capital. In a sense, the whole situation resolves itself into a borrowing program, for the issues of inconvertible paper are themselves in the nature of a forced internal loan. The point here to be made is that a considerable portion of these foreign borrowings are expended *directly* and immediately in the lending country, and are not remitted by bill of exchange to the borrowers. Such was the case, for example, with Argentine borrowings for railroad purposes in the years preceding the Baring Panic. A great part of the loans was spent for railroad construction materials in England, the same country in which the loans were made. The result, of course, was an expansion of Argentine imports. But this expansion had no direct connection with that series of consequences—exchange rates, prices, value of money—which we are considering; for, as has been said, these imports did not give rise to exchange transactions at all. My analysis of Argentine imports¹⁴ in this period shows that, aside from these

imports of construction goods, general imports did move in accordance with the theoretical expectation. They diminished with the progressive elevation of the premium on gold. And when in 1890 the flow of borrowings ceased, the gold premium meantime rising to 151¹⁵ and finally (in 1891) to 364, the decline of imports was starting indeed. Imports declined 14 per cent in 1890, and another 53 per cent in 1891. Throughout the subsequent years of the paper money period, moreover, the fluctuations of the import trade show a precisely inverse relation to the fluctuations of the premium on gold.

TRADE CHANGES UNDER CONDITIONS OF DEPRECIATED PAPER

We may proceed, then, to the statement of how trade changes occur under conditions of depreciated paper. The general explanation, as we have seen, is to be found in the causal relation between depreciating paper currency, exchange rates and prices, which is of such a sort that when paper is depreciating exports are stimulated and imports discouraged. The particular point at issue is as to the precise nature and workings of this interrelation. It is unnecessary to summarize further the various views that have been taken.

The Case of Argentina

The present writer recently spent about a year in Argentina upon an investigation of Argentine international trade under the régime of inconvertible paper money that existed prior to the passage of the Conversion Law of 1899, which placed Argentina upon the gold standard. It is interesting, there-

¹⁴ Williams, John H., *Argentine International Trade under Inconvertible Paper Money*, Harvard University Press, 1920, Chapter XVI.

¹⁵ Average for 1890.

fore, to point out one or two important differences between the paper money mechanism, as it was found to have operated there upon international trade and the foregoing exposition of its workings.¹⁶

The investigation indicates that both of the general conclusions which appear in the theories which we have reviewed require qualification:

(1) That there is a necessary correspondence between the gold premium and the rate of exchange;

(2) That there is a "gap" between the gold premium (or rate of exchange) and the general price level, or, more carefully stated, between the gold premium and the price of international goods, and that it is this "gap" which operates as an extra profit or "bounty" to the exporter and as an added burden upon importers.

The correspondence between the exchange rate and the gold premium depends entirely upon whether the exchange mechanism in the depreciated paper money country is a gold exchange or a paper exchange. If the exchange mechanism is a paper exchange, the rate of exchange is itself the measure of the premium on gold, for under such a system bills of exchange, giving title to foreign gold money, are bought and sold directly in terms of the domestic paper currency. That such a paper exchange mechanism does not necessarily accompany a régime of depreciated paper currency, however, is proved by the experiences of Argentina. There, throughout the period of inconvertible paper money, 1884-99, a gold exchange

was consistently maintained. Persons having foreign dealings kept a gold account, as well as a paper account, with their bankers, and purchased exchange with gold, which they in turn purchased with paper pesos in the open market, gold balances being settled bi-weekly at the Stock Exchange. Under such a system there are gold points and gold movements to and from the paper money country, which operate in precisely the same way, and from the same causes, as in any gold standard country. The Argentine par of sterling exchange is 47.58 d. Except for a few months in 1884, when specie payments were first suspended, exchange rarely fell below 46 during the whole period of inconvertible paper, notwithstanding the fact that the paper currency depreciated violently, reaching its climax in a gold premium of 364 in October, 1891. The total gold exports for the fifteen years, 1884-1899, were \$90,000,000, and the gold imports, \$158,000,000. In 1888 the net gold imports reached the astonishing total of \$45,000,000, and in 1889 the movement was the other way, the net exports being \$12,000,000.

The size of these gold movements, and more particularly their dates, prove conclusively that they are not to be explained away as representing gold to be used in the arts, or for contracts stipulated as payable in gold coin. In 1888 the fever of borrowing of foreign capital for railroad building and land speculating, which ended in the Baring Panic of 1890, reached its height. Argentina, though then a country of but 4,000,000 inhabitants, borrowed, in 1888, \$250,000,000 of foreign capital. The result was a large favorable balance of payments, a rise

¹⁶ John H. Williams, *Argentine International Trade under Inconvertible Paper Money*, Harvard University Press, 1920, Chapters II and XI.

of exchange to the gold import point, and a heavy inflow of gold. In 1889 borrowings ebbed, Argentina began to feel the burden of the large interest payments due on foreign capital previously borrowed, exchange fell, and gold flowed out. These gold movements were of precisely the same sort, and occurred in response to precisely the same exchange mechanism, as in any gold standard country. And this happened, notwithstanding the fact that the average premium on gold was for the whole period well above 125, and for the first five years of the '90's was well over 200.

It may be admitted that, as regards the exchange mechanism, the Argentine case is rather the exception than the rule; and that usually depreciation of inconvertible paper currency shows itself in a correspondent depreciation of exchange, and the destruction of the gold points. That is, of course, the case with the exchanges of the European belligerent countries at present. It is by virtue of this peculiarity, however, that the Argentine case is worthy of especial examination; for it points to the conclusion that the correspondence between the premium on gold and the depreciation of exchange, and the consequent gap between these two and the general price level, is not the essential feature of the explanation of trade changes in countries on a basis of inconvertible paper money. The significant fact is that whatever be the exchange mechanism, whether a paper exchange or a gold exchange, gold cannot enter into the monetary circulation of the depreciated paper country, but stands always at a premium, whenever and so long as no provision is made for the free conversion of gold into paper

and paper into gold at a fixed rate. Since gold cannot enter into circulation, or serve as a basis for circulation of convertible forms of credit, it cannot bring about those changes in price levels which, in the theory for gold countries, effect changes in exports and imports.

Price Changes in Depreciated Paper Countries

In fact, precisely the *opposite* price changes would occur. In a gold standard country, an increase of remittances to the outside world—such as an increase of interest payments on securities held abroad, or an increase of tourists' expenditures, or of immigrants' remittances—would, if sufficiently heavy, drive up exchange to the gold export point, induce an outflow of gold, and thus *lower* prices. In a depreciated paper country, such an increase of remittances, by requiring more of the domestic paper to be given for the title to gold (whether the purchase be that of a bill of exchange, as in the more usual case, or of gold coin where-with to purchase exchange, as was the case in Argentina), would lower the value of the domestic paper currency and thus *raise* prices. In the case of a depreciating paper country, which still maintained the gold exchange mechanism and permitted the free movement of gold, the rise of prices would take place as the result of an outflow of gold, which, by lessening the supply of gold in the home market, would occasion a rise of the premium on gold, or, in other words, cause still further depreciation of paper. In the case of a depreciated paper country which had not maintained a gold exchange, but which had been drained of gold or had imposed an embargo on its

export, the same result would ensue, though by a different process. Without any flow of gold, paper would depreciate below its previous value because of the increased demand for exchange occasioned by the heavy foreign remittances to be made, and the consequent rise in the paper price of exchange (the title to foreign gold). This would be the first effect in Germany, for example of such a heavy demand for exchange as that which would be caused by the payment of \$750,000,000 a year of indemnity.

¶ We find, then, in depreciated paper countries, just the opposite price changes from those which would occur, under similar circumstances, in gold countries. And yet, these opposite price changes bring about precisely the *same* trade changes. An increase of remittances would, in a gold country, lower the price level, stimulate exports and discourage imports. Similarly, in depreciated paper countries, an increase of foreign remittances, though *raising* prices, would result in an increase of exports and a decrease of imports.

That such is the fact is indicated by numerous instances. The heavy Argentine borrowings of the '80's, to which reference has been made, caused an expansion of imports. But in 1890 when borrowings had ceased, the large interest payments (about \$60,000,000 a year) on the previous accumulation of foreign capital, created an unfavorable balance of payments, and resulted in an excess of exports over imports. Precisely analogous was the overturn in our own trade balance in 1873. Today, British exports are expanding for a similar reason. Likewise, in the future the annual reparation remit-

tances from Germany may be expected to result in a large expansion of the German export trade, and to bring about an excess of German exports over imports sufficient to cover the annual remittances.¹⁷

How Trade Changes are Brought About

All these are cases in which trade changes similar to those that would occur in gold countries are effected under a régime of depreciating paper, and in spite of the difference in the direction of the accompanying price changes. How, then, are these trade changes brought about? The Argentine investigation points to the following explanation. It finds the stimulus to exports, and the discouragement of imports, in the different effects of a rising gold premium (or a depreciating exchange) on different sets of prices, all of which form a part of the general price level. Stated more definitely, exports are stimulated because of the different effects of depreciating paper money on the selling prices of exports and their cost of production.

International Prices.—Except in rare instances, where a nation produces so great a part of the world supply of a product as to dominate the world market (as in the case of our own cotton, or of Brazilian coffee), one nation cannot ordinarily determine international

¹⁷ That is, such part of them as may not be covered by other German "invisible" credit items. See John H. Williams, *The German Reparation Payments—Discussion—American Economic Review*, Supplement, March, 1920.

The most illuminating discussion of the effects upon international trade of the German reparation payments which I have seen is that of Professor F. W. Taussig. See his articles in the *American Economic Review* Supplement, March, 1920, and *The Atlantic Monthly*, March, 1920.

prices. It can only accept the international price, and determine the amount of product it will export at that given price. An exporter in the depreciated paper country, therefore, in buying goods for foreign consumption, would base his price on the international gold price of the commodity, the cost of freight to the foreign country, and the premium on gold. In other words, given the foreign gold price, minus cost of transportation to the foreign market, he would convert his price into the domestic paper currency at the current rate of exchange. Given free competition, his export price thus becomes a paper money reflection of the international gold price. Abstracting from fluctuations in the foreign gold price, it is thus apparent that the rise of export prices would keep pace exactly with the rise in the premium on gold, and, in fact, be identical with it. My study of Argentine export prices for the fifteen years, 1884-99, shows this correspondence with the fluctuations of the gold premium to a striking degree. On the other hand, it shows that wages, rents, and other costs of production do not rise so rapidly as export prices. It is this gap between export prices and exporters' costs of production, and not, as has been stated, a gap between the rate of exchange (that is, the gold premium) and the general price level, or between the rate of exchange and the price of international goods, which gives an extra profit, or "bounty," to the exporter, and thus causes exports to expand.

The Present World Situation

There remains to be considered the applicability of these conclusions to the

present and future international situation. These conclusions are concerned with a set of monetary and trade conditions which constitute but one aspect of an abnormal world situation in which there is a complexity of currents and counter-currents. Moreover, they deal merely with one set of forces which are operating upon trade, money and prices. How far the particular set of forces we have examined will be permitted to work out their effects upon international trade, it is impossible to predict. That they will play some part, and that, on the other hand, they will be in some measure overlaid and obstructed by more powerful forces working at cross purposes, seem alike obvious.

The change that has occurred in the international position of the United States, for example, the violently rapid shift from the debtor to the creditor position, would point, in the strict theory of the case, to further inflow of gold and rising prices. But the nations which have remittances to make are unable to remit gold, and, on the contrary, gold is being drawn from the United States by those neutral countries in which, during the war, the dollar was at a discount, the net resultant being a considerable net outflow of gold.

European Specie Payment Resumption

A factor to be reckoned with in endeavoring to ascertain the probable course of international trade in the next few years is, of course, the possibility of resumption of specie payment in the European countries. Resumption is, I believe, certain; and in the case of certain countries, particularly Great Britain, it may come sooner than is apparent upon the surface of events.

Were the gold standard resumed, the theoretical expectation would be a flow of gold from the countries owing heavy obligations to the United States, falling prices there, rising prices here, increasing exports there, decreasing exports here, with contrary shiftings in imports. But general resumption of specie payments on the basis of the present gold holdings of Europe appears improbable; and the further inflow of gold to the United States would imply still further depletion of European gold stocks.

International Position of the United States

We have, besides, the over-extended condition of internal credit in all countries, a range of price levels admittedly abnormal and temporary. Some deflation, at home and abroad, is the general expectation. A reasonably safe statement would be that, granting the certainty of the deflation process throughout the world, our new international position is such as to require a price level sufficiently above that of European countries, once they are on the gold standard, to induce a flow of their exports, wherewith to make remittances due to us, and a decline of our exports to them. This seems a necessary ultimate condition, if our trade balance is to show that excess of imports which is the logical eventual outcome of the war-time changes in our balance of international payments.

In the immediate present at least, however, we are faced with a general condition of depreciated paper currency in the European countries; and,

in certain cases, that condition is likely to be of considerable duration—in Russia and in Germany, for example. We may, therefore, ask ourselves how the particular set of factors we have examined are likely to manifest themselves in these instances. Evidence that depreciating paper stimulates exports from the country whose currency is falling in value and discourages imports, was, of course, afforded by the increase of British exports and the decline of our own exports which accompanied the pronounced fall of sterling this past winter. How far, in the case of other countries, the working out of the full effect was impeded by the continued operation of that fundamental condition which has dominated world trade since 1914—the imperative necessities of war and reconstruction as shown in the persistent demand for our products and the temporary inability of the war-exhausted countries to react to special stimuli to exports however powerful—it is impossible to estimate.

Reparation Payments of Germany

In the future, the most interesting case in prospect is that of Germany and the reparation payments; and since the full amount of the annual payments, \$750,000,000, is not to be assumed until 1926, we may expect that the general state of world trade will have settled down sufficiently to afford to the economist an opportunity for additional verification of the principles of international trade and foreign exchange under conditions of inconvertible paper money.

Present Day Industrial Conditions in Germany

By R. W. BALDERSTON

Secretary Inter-State Milk Producers' Association, Philadelphia, Pa.
At present in Germany with the American Friends Service Committee

The author of this article had been in Germany about four months when he wrote this article for *The Annals*. Mr. Balderston is a careful observer of industrial affairs and has had exceptional opportunities to make first hand investigations of conditions in Germany as they now are. Being one of the mission of the American Friends Service Committee to aid in the distribution of food he has come into contact with all classes of the German population.—THE EDITOR.

IT is impossible for a casual visitor in Germany today to get other than an incorrect picture of conditions here. Around the hotel lobbies there is not much that is different from the old Germany. Business travelers can learn some things. Forward looking executives have told some of us still more as we have met them in connection with our work. They have been most frank and open in discussing any matters even remotely connected with the question of relief. These conferences naturally lead to the discussion of the present and future economic problems. At the same time, we live so close to the mountain that it is very difficult to get a proper perspective, and the mists with which the top is always encircled give a different impression every time that we look at it. Therefore, I prefer rather to endeavor to give a correct picture of conditions in certain factories which are typical of the general industrial situation.

I recently visited two German factories producing the same class of products: equipment needed by a rather large general industry. The first is, or was, the assembling plant of a well-known American company. The second is a German corporation, but with close affiliation with similar corporations in at least two other

European countries, and with one of the important corporations in the United States. It is the largest factory of the kind in the whole of Europe.

Let us first visit No. 1. The Direktor sits, as of yore, in the office marked "Privat." The room is heated by a tiny temporary stove, for the steam from the factory is too uncertain these days. The designing and sales departments are closed. In the outer office we can see a faithful stenographer, and a young bookkeeper whom we learn has just returned to his old position after spending four long years in a Siberian prison camp. We are told that the vacant chair at his side belonged to a boy who lies buried somewhere on the eastern front. We sit down and talk to the Direktor who does not mind interruptions, for just now, unfortunately, he is not very busy. Before the war, the factory received from the parent factory in the United States the important special working parts of the machines that they manufactured. The heavy cast frame was bought from a German foundry under contract, and the price was always very cheap, so the castings were much heavier than the American model and, therefore, more attractive to the European buyer. Throughout the war, the factory was engaged in war work, for it was com-

mandeered at the very beginning like all others, and the property itself was taken when the United States entered the struggle. Its war production consisted of projectile cases of some of the very small sizes and also, since the armistice, some small replacement supplies for the local railroad. The German government has just released the plant before we visit it so we can see just how it is prepared to take up its peace-time pursuits.

UTILIZATION OF PRE-WAR MATERIAL

Entering the factory building, we meet the Superintendent and his assistant who are busily engaged in supervising the sorting of the old pre-war material on hand, which has been stored away in the corners of the stock room and which they now propose to start through the factory. In fact, the first lot of thirty machines is going through the week that we come to see them, and a few samples of various models that had been cast aside in 1914, when they were almost completed, are being painted and tried out, ready for the packing room. We visit the power plant. It looks much like thousands of those in the States. But what is that fuel that the fireman has in his shovel? We go out to the bins and find such an assortment that we make a note of it, though we have already become somewhat hardened to a fuelless land. There is a supply of wood of odd lengths and sizes; there is peat or "torf," only slightly dried; there are at least two styles of lignite briquettes and, further on, three different kinds of coal. This may be an extreme case but the locomotive tenders very generally carry two kinds of fuel at a time.

Operating the machines in the factory are about forty men, or one half the pre-war force. All are old employes that have been reinstated by direct order of the government, as they have returned to claim their jobs. Just one woman remains at a bench as a reminder of the economic substitution of the war. The machines all have been much repaired. All bearings are worn abnormally because of the lack of proper lubricants. The solution pouring over the tools on the lathes is not much better than so much water. Soap is still very difficult to obtain here and no one can afford to use oil for such a purpose. As a consequence, the operation of the machines is necessarily slow and uncertain, and the standards of accuracy cannot be kept up to that which made German workmanship what it was before the war. As an American engineer present puts it: "In the States the whole outfit would go to the junkpile."

ATTITUDE OF GERMAN WORKERS

The attitude of the workers is typical. Most of them are on "piece work," but even these do not appear to be in any hurry either. All are mechanically dragging through the day without interest in their tasks. Their brains seem to be responding chiefly to the reflexes built up through habits of industry formed years ago, and the work today does not make any appeal. They work eight hours a day and five days a week and are paid an average of 2.75 marks per hour. Soon they will be paid three marks per hour.

Returning to the office, the Direktor tells us about his plans for the future. The American office has recently sent

a representative to the plant, just to see "if it were still there" and, if so, to report on the conditions as he found them. No instructions have yet come through. Such are the uncertainties of modern business communications. The Direktor, therefore, proposes to work off his stock of unfinished goods while awaiting developments. No definite orders have yet been received and it is rather difficult to name a selling price, for the value of the mark is so variable and the estimated cost of the materials so uncertain that almost any guess would be as good as another. The Direktor therefore proposes to sell on the basis of the cost of labor and material *when bought*, plus the usual profit, regardless of the cost of replacing these materials in the next purchase. This seems to be the usual practice and perhaps the best one under the circumstances, though it leads to some complicated situations. When ready for new material he does not know whether or not the factory can continue to compete with those factories that are not dependent on stable international trade relations for their raw materials or their sales. This waiting attitude is also typical.

OLD STANDARDS IN GERMAN FACTORIES

Now let us visit the larger factory where the international complications are not so serious, because the ownership is German, the materials are now very largely of German origin; they manufacture a larger variety and the domestic markets for some of the lines have been already opening up in this country in an encouraging way. Here we make a few new observations. The power is supplied by a battery of Diesel internal combustion engines,

and also some electricity is purchased from a larger power plant. The supply of fuel oil for the future is worrying the management greatly. There is no reserve of raw materials of any kind and no guarantees of further deliveries. It is interesting to see the substitute materials going through the factory side by side with those of standard quality of pre-war purchase, the substitute metals and woods being of domestic, "inland" origin and replacing that which cannot now be obtained from abroad or which are too costly for present use. Consumers are patiently enduring this situation, awaiting the time when they can again purchase goods of a more satisfactory quality. Labor saving devices are lacking in all departments of the factory, and the designs of machines being built are the massive ones that were familiar to every American salesman who attempted to sell, in competition, the lighter made ones from the States. But our young and obliging guide admits that German manufacturers cannot compete in the future in the open market unless new efficiency standards are adopted in the shop to reduce the amount of now relatively higher-priced labor. Moreover, the new prices of materials will force new designs into popularity. It is well known that heretofore German machinery has been permanently constructed because of the desire to keep down replacement costs, and this factor was a very important one in keeping up the efficiency here as the war continued.

LIVING CONDITIONS OF GERMAN WORKMEN

But let us go home with some of the workmen at night and see how they

live with an average income of 125 marks per week, instead of 20 marks, the amount received before the war. The food for the week, which can be obtained through a food ticket, has just been brought home and, for this week, is for each member of the family as follows:

<i>Hamburg</i>	<i>Per Week</i>	<i>Feb. 7-13, 1920</i>
Potatoes.....	500 grams	400 cal.
Pea beans.....	200	534
Rye flour, etc.....	100	305
Syrup.....	150	375
Teigwaren.....	300	620
Butter.....	50	380
Margarine.....	100	760
Meat.....	200	240
Sausage.....	20	30
Bread.....	1900	3940
<hr/>		
Total.....	3520	7584
Daily average...	503	1083

In addition, the father, because he is a moulder in the foundry, has 500 extra grams of horsemeat, giving 600 calories per week or 86 calories per day. The average weekly number of calories in the ration fed the Belgians through the Belgian Relief Commission was about 2800 calories, and the proper diet recommended by the Royal Society for Great Britain is 3400 calories. This food has cost about 16 marks per person in February, 1920, or 80 marks for a family of five. The balance of the week's wages, 45 marks or 36 per cent, must cover the other food needs of the family and also clothing, fuel and shelter.

Houses, such as this family occupies, rent for 125 marks a month or 31 marks a week and so if the home is not owned, but 14 marks are remaining each week to buy extras. As a consequence, many houses are being sold to pay living expenses from the proceeds and

there is an enormous sale of old furniture.

Suppose we go shopping with the wife next day and see what this wage will buy. Fish will cost 6 marks a pound, so the 45 marks would pay for enough for two meals for the family. Some apples for sauce cost from 1.5 to 2.5 marks per pound. A coat for herself of the cheapest wool will cost 750 marks, so she buys one made of some "Ersatz," or substitute material, for 350 marks. Shoes of the very poorest leather, for the children, cost from 80 to 125 marks. Good shoes for the husband are priced from 200 to 300 marks, consequently, the men whose army boots are still serviceable are wearing them for all occasions. The shop windows are full of things but very often there is not a second article of the same kind inside and even yet the department store windows are full of strings of postcards for decoration. It is of course true that there is a certain amount of goods imported that can be had by the rich and there are some lines that seem quite well filled, but the business done is only a tithe of what it was normally. There is some "Schleichhandel," or illegal food, everywhere and the hotels serve meat and butter and a little breakfast roll that is made of a whiter flour. This business is more common than during the war and is practiced more in some towns than others. But suppose our companion wishes to get some of this food. The butter costs 32 marks a pound and the meat much more. She cannot consider making such a purchase. I recently was invited to take lunch with a group of eight at one of the prominent restaurants of Hamburg and the waiter, though he had

been saving them, had only seven "Hamburg" steaks in the shop and the eighth guest took fish! Regardless of wealth, there cannot be any extra milk for the distribution is always watched very fully and it is all for the children and the very sick, on the certificate of the physician. The supply of the large cities is about one-sixth of the normal consumption. In some seasons there is no fresh milk for any above three years of age, not even the sick. Rent for such four room houses as we visit is 125 marks per month or 31 marks per week, which takes nearly all the balance of the week's wages when the home is not owned by the worker.

THE UNEMPLOYED IN GERMANY

Let us visit the home of a neighbor who has no work. He receives a non-employment allowance from the city, 36 marks for himself, 15 marks for the wife, and 9 marks for each of the three children, 78 marks in all or just the price of the food on the ration cards. As a consequence, there is no fuel except that which the children bring home from the ashdumps and along the railroads and in the corners of the coal barges. The number of unemployed in Bremen, a city of 250,000, in the last week in February was 5,000 men, at least one in ten. Next, let us go into the house around the corner, and visit a widow with two children; she makes 65 marks as a cleaner at the office building downtown. Here, the children have no clothes but those on their backs and no bedclothes. The mother has cooked two suppers this week but this is Saturday, so the store of wood in the corner will be called on tomorrow to make a Sunday dinner.

The other days the food and the room are cold alike, and must be warmed by the heat of the human body.

EFFECT OF LIVING CONDITIONS ON INDUSTRIAL SITUATION

These living conditions have a direct bearing on the industrial situation. The physical condition of the workers is such that they are not able for full work. Men are fainting daily at their tasks. This is perhaps most apparent among the brain workers who do not have any extra food allowance and who are not so able to assimilate the bread which is milled now to 95 per cent of the total grain instead of 71 per cent as formerly. The present flour is chiefly rye and barley with a little wheat and potato. These clerks are not paid as well as the laborers for they have not been organized to demand it. Doctors and judges are often not paid any more than before the war and are in very straightened circumstances.

EXHAUSTION IN GERMANY

Livestock Food Supply

In addition to the physical condition of the workers, the present exhaustion in Germany is very striking. The productive power of the soil has depreciated at least 40 per cent, to quote from an authentic report of one year ago. This loss cannot be fully regained for at least a decade, even under the most favorable circumstances. The sandy loams of the great northern plain do not hold the humus and plant food like the naturally fertile lands of our own middle west and are now reduced to the point that the German agricultural improvement campaign found them twenty years ago. Ger-

man livestock food efficiency, to refer to the same authority, is 55 per cent of normal. This will recover more rapidly, for the beef and milk shortage is largely a question of food for the animals, which was always very largely imported and consists of grain and oil by-products. The number of milk cows has been reduced only from 11 million to 9 million and the total of all cattle from 20 million to 17 million. Hogs were very promptly reduced at the beginning of the war and are now in number 10 million against 25 million before. The recovery of this food supply will take at least two years of breeding and importation before it assumes anything like its past importance. One hesitates to hazard any guess about the grain crop for 1920. The planting conditions were very unfavorable last fall and there have been great floods this winter covering great areas with water for weeks, but on the other hand the spring has opened early and it is still a long time till the harvest.

Railroad Transport

The railroad transport efficiency is reduced by worn-out rolling stock and roadbed, lack of fuel and labor difficulties. Some improvement is, however, apparent in passenger and freight traffic both, evidently due to a more efficient peace-time organization.

Raw Materials

Stocks of raw materials on hand when the armistice was signed were almost nil in spite of the marvelous substituting ability and conserving genius of the people. The thoroughness with which the nation threw every resource into the conflict makes recov-

ery and reconstruction so much the more difficult now. The production of raw materials to fill the future needs of industry depends on factors, at least two of which are at present largely unknown—(1) national alignments and (2) labor. The first mentioned will determine which agricultural and mining areas are to be German and what part of the production of those remaining in Germany is to be applicable to the needs of German industry. The second factor, labor, is even more uncertain. The laborer here has never shared at all in deciding industrial policies and nobody can foretell what he may do with his present large measure of self determination, or how labor and capital will "pull in double harness." Labor is also largely influenced by the political situation and is much depressed by the fact, for instance, that the coal he is mining is perforce largely for foreign consumption.

FOOD SITUATION IN GERMANY

The food situation promises to be much more serious as the present supply is exhausted and this will certainly have a serious effect on the industrial situation. Recovery in food production for the next year will be still very poor as long as there is not more attention paid to the factor of price as a stimulus to production. The policies of the German food control authorities have been so diametrically different from those of the United States Food Administration that it is easy now to compare them along several lines. In one particular, at least, the American plan was far superior. Production kept pace with consumption at least to the point that it could

become normal in one season. All this is aside from any discussion of the conditions which both had to face.

THE PRESENT MIXED POLITICAL SITUATION IN GERMANY

An example of the present mixed political situation is the beet sugar industry. The beets are grown in Tzchecho Slowekee, the factories are in Austria, and the coal somewhere else; the beets rotted because the governments concerned would not allow the international transportation necessary to get the three elements together. The textile industry cannot get started because of the exchange rate and because there has not been any satisfactory basis of credit devised so the manufacturers can pay for their imported raw materials. It would be tiresome to go into more detail and take up the whole list of German industries, as they seem to come somewhere within the range of those that have been mentioned.

EFFECT OF PEACE ON GERMAN INDUSTRY

The questions arising out of peace have a very direct bearing on this matter of the recovery of German industry, and it is difficult to discuss the future without referring to some of the more important of them. But there is not room in such a paper and they are now being widely discussed in the contemporary press and literature. I may say that some of the financial terms of the treaty do not seem possible of fulfillment, and it is to the interests of the Allies, as well as the peace of the world in general, that they be somewhat modified. This is said from the viewpoint of business stability and it

is now becoming recognized in England that a bankrupt Germany cannot pay indemnities.

To talk to the business men here is to have a series of questions put at you about as follows: How can we import raw materials when our credit and our currency is worthless? How can we work without materials, either foreign or domestic? How can our laborers live without work? We are short of food; how can we buy food without money? It is well expressed as a vicious circle, a squirrel cage in which the German people are treading the wheel to the point of exhaustion and yet can see no way out. Yet there are many things to point to a better time if the matter is handled carefully. The people have learned self-sacrifice and can do with far less of the better things of life than they had before the war. There is a movement to pool all the industries of the nation in one association to get foreign credit. If food enough can be had for the next few months it will strengthen the forces making for order and business integrity, for the German is by nature and training conservative and orderly, and when he has work to occupy his attention and is fairly comfortable in body he is very slow to take up extreme ideas.

But the last few weeks show some improvement. The coal miners are working longer hours and this seems to be reflected all over the country a little. The great Krupp works at Essen were among the first to get started at peacetime production, being fortunately situated with a coal mine within the factory fence and iron ore nearby. Now a great variety of products are made, everything from padlocks and

typewriters to railroad locomotives. Some of the departments are so busy that three shifts of laborers and mechanics are employed.

The future peace of the world is wrapped up in the question of the rapid resumption of industry and trade in all the countries of Europe and the

United States, and we cannot afford to miss every opportunity that is offered to see to it that this settlement is accompanied by such international and internal agreements as will make permanent the ideals that the people of the United States thought they were fighting for and dying for.

The World Breakdown

By SIR GEORGE PAISH

London, England

THE world has begun at length to feel the full economic consequences of the war, and of the dislocation of production which that great conflict entailed. How far reaching those consequences will become has yet to be discovered. In some measure the extent of the consequences will be governed by the wisdom with which an effort is made to control the danger. If the situation is handled wisely and in a statesmanlike manner, then readjustment will be effected without any great measure of suffering, but if the situation is handled by persons lacking knowledge of fundamental economic conditions, then a very great disaster is at hand. There will, on the one hand, be tens of millions of people lacking the necessities of life, while, on the other hand, there will be vast supplies in the warehouse, or on the farm, which will not be sent to the people who need them.

THE CONDITION OF WORLD PRODUCTION

It is essential to realize that the war has brought about a very great curtailment in the productive power of certain countries, and, that while it has stimulated and increased the productive power of other countries, the aggregate amount of world production is far beneath the level needed to meet the world's ordinary requirements. Given the very best and most efficient methods of distribution there would still be shortage, but with production a long

way below normal and with inadequate means of distribution, starvation, on a great scale, becomes inevitable.

With defective statesmanship the world will suffer from three evils: (1) lack of supplies where they are most urgently needed; (2) lack of employment, and (3) lack of buying power. In other words, there will be not only a famine in food and raw material, but a famine in money as well. With effective statesmanship, however,—and I am here speaking of the statesmanship of all countries—famine in food, raw materials and money should be effectively averted.

Food Supply of Western Europe Prior to War

From Russia.—To understand and appreciate the world need of food, it is essential to recall that, prior to the war, a very large part of the food needed by Western Europe was supplied by Russia and that the European nations experienced no difficulty in paying for these supplies because Russia had to make large payments to them in respect to interest on capital, and because Russia needed to buy from Western Europe great quantities of manufactured articles of all kinds and descriptions. Before the war, Russia supplied to Western Europe, on the average, some four hundred million bushels of cereals, mostly wheat. When war began, and the Dardanelles was closed, this great supply of Russian food was shut off from Western

Europe and has not since been available. Moreover, the power of Russia to produce food has been, temporarily at any rate, most seriously curtailed. In the early years of the war, when Russia was unable to send abroad her surplus, the production of Russia was greatly curtailed, while her consumption was increased. This movement went so far that in the spring of 1917 Russia had not enough food for herself and the economic privation which resulted brought about the Russian revolution. From that time to this, Russia has been in a state of great disturbance. The productive power of the country has remained at a very low ebb. Russia is not only unable to produce a surplus of food for export, but she is also unable to supply her own people with sufficient food. Probably no step would be more effective in inducing the Russian people to adopt a more constitutional and democratic form of government than that of supplying them with the necessities of life. In other words, instead of Russia being able to supply modern Europe with food, as she was doing prior to the war, temporarily at any rate, it needs to import food in order to support a very large number of people in the north of Russia.

*Increased Demand for Import of Foods
into Europe*

The next factor to be noted is that the European nations, as a whole, need to import very much more food and material than they did prior to the war. Over practically the whole of the war area, that is, Germany, Austria-Hungary, Roumania, Servia, Italy and France, there has been in the aggregate very great curtailment of pro-

duction. As far as the data is available, the curtailment of output is not very far short of 40 per cent. The curtailment is greater in some countries than in others, but the average curtailment is this high figure. Hence, just at the moment that Russia cannot supply Europe with food, Europe needs to buy much more food than ever. There is then a double deficiency—a greatly diminished supply with a greatly increased demand.

Great Britain.—The productive power of Great Britain has, on the whole, been maintained, though not increased. Great Britain needs to buy from outside countries just as much today as she did prior to the war, when about two-thirds of all her food supplies had to come overseas. Including Russia and Great Britain, Europe's production of food has been curtailed between 30 and 40 per cent since the war. Prior to the war, Europe, as a whole, needed to buy from outside countries a substantial part of the food she used. Today, Europe needs to buy from outside countries nearly 50 per cent of the food she needs for consumption. To the extent that Europe cannot obtain those supplies, her people must go short. Some economy in consumption in comparison with pre-war levels is possible, but economy to the extent of 50 per cent is impossible without involving the people who dwell in the great towns of Europe in almost complete starvation.

In considering the world's food situation it is essential to recollect that just as the nations which produced a surplus of food for export meet their own needs before they send away their surplus, so the country districts of Europe usually meet their own needs before

they sell their surplus to the towns of Europe; and that, consequently, the burden of deficient supply falls mainly, if not entirely, upon the town populations. Moreover, in considering the present situation, another factor has to be taken into account. With the conclusion of peace last summer the people of Europe gave a sigh of relief, under the impression that their war privations were at an end and that there would be a very much greater supply of food in the future than in the past. Consequently, the consumption of food since last summer has substantially expanded and there has not been anything like the economy there would have been had the war continued, as the people had realized the difficulties that would arise in purchasing available supplies. In some measure, additional rations were granted in order to prevent political agitation and to keep the people quieter than they would have been if a stringent ration had been maintained. The effect of this greater confidence has been to bring about a substantial expansion in food consumption and to reduce the farmers' stocks in Europe to a relatively small total. Hence, for the balance of the current season, still greater imports even than last year are essential.

Fortunately, during the war with the great curtailment in production in Europe and increased need, the crops of the food-producing countries, which include the United States, Canada, Argentina, Australia and India, showed substantial expansion in the aggregate, an expansion which helped to keep shortage in the Entente nations within limits. Now, however, a short supply of food over the whole of Europe, including the Central Powers and Russia,

has to be met. The surplus supplies from these outside countries are not nearly sufficient for the purpose, and it is evident that, even if in one way or another, the means can be obtained to enable Europe to purchase the surplus food supplies of these countries, great economy in consumption will have to be exercised in order to make the supply last out until the new harvests are gathered next fall. Indeed, it is to be feared that, in spite of every possible measure that may be taken to supply the peoples of Europe with the food they require, there will still be most serious deficiency, which will amount almost to famine in certain countries and in certain districts. Even with the most efficient distribution of supplies, a condition of great privation would seem to be unavoidable in northern Russia, in Germany, in Austria, and in Poland, while Italy, France and even Great Britain will suffer from serious shortage.

DIFFICULTIES OF FOREIGN IMPORT TRADE FOR EUROPE

There has now arisen, however, a situation which warrants much anxiety as to whether or not even the food available in the countries that have produced a surplus of food will be placed at the service of the European nations, which so urgently need all the food which the world can supply to them. In consequence, not only because of their greatly reduced productive power, but also because of their inability to buy food from Russia, the European nations need to buy greatly increased quantities of produce from countries from which they do not normally buy, and which do not require European goods in payment, even if

Europe were in a position to export such goods.

From Canada.—Ever since Canada has been a great exporter of food to Europe it has been the custom of the Canadian people to buy from the United States, and not from Europe, the manufactured goods they require in payment for their food. Hence, Canada's imports of manufactured goods from Europe in proportion to her exports of produce has always been small. At the present moment Canada is not only exporting great quantities of food to Europe at high prices, but is also buying back in exchange very little of Europe's manufactures. Hence, the depreciation of Europe's currency in Canadian dollars is very great. On the other hand, Canada is buying, as usual, great quantities of American products, but inasmuch as she cannot collect her debts from Europe, except in securities which she has difficulty in selling to the United States, Canada is experiencing very great difficulty in paying the United States for her products. It is probable that Europe will not experience any great difficulty in buying Canada's products, as Great Britain possesses large quantities of Canadian securities, including farm mortgages which the Canadian people are willing to buy back. Unfortunately, the amount of food that Canada can supply to Great Britain in particular, and Europe in general, is but a very small part of the total amount required.

From Argentina.—When one considers the position of Argentina, the situation is much the same. Argentina is willing to sell her surplus supplies of food on credit and to take in payment either European credits or to buy

back some of her own securities which Europe possesses. Nevertheless, the amount of food and raw material that Argentina can supply to Europe for the balance of the current season is but a very small part of the great amount needed.

From Australia.—Unfortunately there has been drought in Australia this season and the amount of food that Australia now has for sale is limited. A very large stock of wheat was built up in Australia during the war, but a good deal of this had to be sent to India last year as there was drought there, and now with Australia suffering from her recent drought, the supply of Australian wheat is greatly diminished. It is hoped that the new Indian wheat crop will be a good one, but owing to the difficulty of providing exchange, it is by no means certain that Europe will be able to purchase anything like normal supplies from India.

From the United States.—But when allowance is made for all the food and all the raw material which the countries referred to can supply, it is clear that Europe will need all the food and all the raw material, as well as all the manufactured goods which the United States can supply to her, and that, without the American supplies, the shortage of food and of raw materials in Europe will be exceedingly severe. In any case, the shortage will be serious, but without American supplies the shortage will be disastrous.

THE INTERNATIONAL MONEY SITUATION

During the War

But here another factor comes in. There is a famine in international

money. Europe, in spite of the vast volume of her national currencies, possesses very little international currency to purchase the produce and goods of the United States, unless that produce and those goods are supplied by the American people by credit operations of one kind or another.

When the War Began.—Doubtless, it will be asked: How was it possible for Europe to purchase so much American produce and so many American goods during the war, and how is it that only now is there difficulty? The answer to this question is two-fold. When the Entente nations entered the war there was a large sum of money due them by the American people, both on current account and investment account, and this money and these investments were used to pay for produce purchased from the United States until America came into the war. There were signs, however, in the spring of 1917, that the Entente nations were beginning to experience difficulty in obtaining the credits they required in order to purchase the food and material with which the American people were supplying them.

After America Entered the War.—When the American people entered the war, the American government assumed the task of supplying the Entente nations with all the money they required to pay for the produce and goods they were purchasing from the United States. In rather more than two years the American government supplied nearly ten billion dollars for this purpose. This action on the part of the American government caused the difficulties of the Entente nations in paying for the things they required in the United States and elsewhere,

entirely to disappear as long as the war lasted. In the spring of last year, however, the American government notified the Entente governments that it was not prepared to go on indefinitely lending money to the Entente nations to enable them to purchase the things they required in the United States, and that they must finance their purchases by ordinary credit operations.

Credit Difficulties After the War

Now that the war is over, the Entente nations experience very great difficulty in arranging credits for the purchase of food, raw material and manufactured goods in the United States. Nevertheless, they have succeeded in one way or another in paying for the produce and foods they required in 1919. In that year, America sold produce and goods to the value of nearly five and a quarter billions of dollars to Europe and accepted payment for them to the extent of only three-quarters of a billion dollars in goods, leaving four and one-half billions of dollars to be financed by credit operations of one kind or another. Of this total rather more than one-half was satisfied by the grant of credit to the Entente nations by the American government, and the other half was settled for, either by sales of European securities to American investors and bankers or by the creation of short credit. From the data available, it would appear that a large part of it was arranged by short credit, which merely means that Europe has still to face the task of payment. Recently, Mr. Glass stated that the American government had granted additional credit for about three-quarters of a billion dollars for

the purchase of war stores sold to France. This means that, altogether, America, in the past year, sold about six billion dollars worth of produce and of goods to Europe and that Europe was able to pay only to the extent of three-quarters of a billion dollars in goods. The whole of the balance of five and one-quarter billion dollars had to be settled in credits, long or short, and in securities.

The American government has now notified the European nations that it is not prepared to finance the exports of American goods by means of American government loans. This means that in so far as Europe cannot finance its purchase of American goods by ordinary credit operations, it will be unable to buy them. Let us now look at the situation which has thus arisen.

In the first place, Europe still owes a considerable sum on short credit in respect of produce and of goods bought in 1919, and, in the second place, it has to obtain fresh credit for the purpose of buying any goods it cannot pay for by exports of its own goods in 1920 and in succeeding years. Not only has the power of Europe to obtain credit from the American government come to an end, but her power to obtain credit from American bankers has practically come to an end also, not because American bankers are not willing to grant credit, but because their power to grant it has been used entirely. You will recollect that in 1914 the federal reserve banks were brought into being and were entrusted with the custody of the reserves of the national banks. This action by the government and by Congress set free for banking purposes something like four hundred millions

sterling, or two billions of dollars of gold and cash reserves for additional banking purposes, and gave the federal reserve banks the power to grant banking loans to the extent of about one and one-half times the amount of gold and cash placed at their disposal. In other words, the Federal Reserve Act by the stroke of the pen, as it were, gave the banks of the United States the power to grant additional credit to the extent of about six hundred million sterling, or three billions of dollars. The bankers have now created almost the whole of the credit which the new law authorized. A good deal of that credit has been absorbed in financing the sale of American government bonds, and the balance has been used to finance the trade and commerce of the United States. Therefore, at the present moment, not only has Europe no power to obtain any credit from the American government, but it also has practically no power to obtain additional credits from American bankers. In other words, the methods by which Europe was able to buy the food and material it required from the United States during the war, and until the present time, have now almost ceased to operate, and unless some new method is discovered it is obvious that Europe will be unable to purchase any American food, raw material or manufactured goods other than what it can pay for by exports of its own products, that is to say, only to a relatively small total. The recent fall in the exchanges clearly reveals the great difficulty which Europe is experiencing in making payment for the produce and goods which the European nations so urgently require to buy from the United States.

Foreign Exchange Rates

This week the value of the British pound, which normally is equal to \$4.86 in American money, fell to \$3.18, a depreciation of over 34 per cent. The franc fell to a still greater extent. Normally, only 5.18 francs have to be given for an American dollar, but at the current rate nearly 15 francs have to be given for an American dollar, a depreciation of over 65 per cent. Normally, only 5.18 Italian lire have to be given for an American dollar. Now, no fewer than 18.82 lire have to be given, showing a depreciation of nearly 74 per cent. Normally, the German mark is equal to 23.83 American cents. Now, it is equal to only one cent, and therefore shows a depreciation of no less than 96 per cent. The value of the Austrian crown and the Russian rouble, and the currencies of Roumania, Servia, and the other Balkan states shows enormous depreciation, amounting indeed to not very far short of 100 per cent. In other words, their currencies in American dollars have very little value. All this implies that unless some step is taken to enable the European countries to purchase American goods, that the value of their currencies in American dollars will fall practically to the vanishing point, and that they will be unable to purchase. This means a money famine of an unexampled intensity, a money famine which at the present time, when Europe so urgently needs the food and raw materials of America, entails something far more serious than a money famine. It involves shortage of food in Europe to an extent which will bring starvation to many millions of people, and lack of raw material to an extent that will throw many millions of people out of em-

ployment. Moreover, unless the situation is dealt with effectively, a complete breakdown of the exchanges of credit, of commerce, and of trade throughout the world will become inevitable.

HOW TO MEET THE SITUATION

What is needed to rectify the situation is that the American public, in its capacity of investor, should either be willing to purchase European securities, or should purchase some new international security in which it has complete confidence.

After giving the matter the most careful consideration, I have come to the conclusion that the most effective method of dealing with this situation is by a coöperative effort of the most comprehensive character. The situation indeed demands as much coöperation and as much effort as did the task of providing funds to carry the war to success. The situation, in fact, demands that every nation should assist in the work of overcoming the difficulty, not only because of considerations of humanity, but also because of considerations of self-interest, for every nation is interested in the matter, either as seller or buyer, either as granting credit or obtaining credit. The very worst thing of all for everyone concerned, whether as buyer or seller, is that the situation should be allowed to drift so that no nation can sell and no nation can buy. Considerations of humanity are even more cogent than considerations of self-interest. It is inconceivable to imagine that the Entente nations, including the American people, should have fought a great war in defense of humanity and afterwards should allow humanity to be destroyed by a food and a money

famine, which might be averted by coöperative and sympathetic action.

The result of the war has been to cause the peoples of the world to demand the creation of a League of Nations for the preservation of peace, in order that humanity may never again be threatened by so great a disaster as the recent war. The peoples of the world, when they understand the present situation, will, I am sure, be prepared to demand that that League of Nations shall avert disaster to the race from a food and money famine, and will be prepared to honor any obligation that the League of Nations may incur in averting so great a catastrophe.

Therefore, I suggest that the remedy for the present situation is to be found through the League of Nations and by pledging the credit of the League for the due payment of any food, raw material or manufactured goods which the nations may supply to each other at the present time, and for which they are unable to obtain payment in other goods and in other products. There is a factor in the American situation which renders such a solution particularly advisable. It is very difficult to induce any American investor to purchase securities that are not tax-free, having regard to the heavy burden of taxation in this country. Very much the same situation exists in other countries, where the burden of taxation is a heavy one. To raise all the credit that is needed to enable Europe to purchase the food, raw material and manufactured products that it requires, not only to overcome its immediate difficulties, but in order to restore its productive power and repair its war damage as well, will demand a united and sustained effort. Nevertheless, the effort will be relatively unimportant in

comparison with the financial effort that was needed to carry on the war.

I am convinced that a credit of some twenty billions of dollars spread over five or even ten years will not only enable Europe's productive power to be effectively restored, so that it will be able to pay for the things it needs to buy from day to day, but that it will also preserve the world from a great disaster.

During the war, the nations spent for the purposes of destruction some fifty billions of dollars per annum. They now need to spend in five, or even ten years, a total of no more than twenty billions of dollars for the purpose of repairing the mischief of the war and re-starting the world upon a new era of prosperity, free from the danger of war. When one remembers that during the war these vast expenditures were made for the purpose of destroying wealth and destroying life, while the proposed new expenditures are for the purpose of creating wealth and preserving life, it is obvious that the amount is not only a small one, but well within the power of the nations to supply. An issue of League of Nations bonds, free from taxation in all countries and enjoying good markets in every country of the world, would enable the present situation to be effectively dealt with, and the peril to which Europe, indeed the whole world, is now exposed to be safely overcome. The League of Nations has been created to preserve mankind from the disaster of war. It will give an earnest of its power to preserve mankind from world-wide catastrophe by overcoming the grave danger to which civilization is now exposed from famine, and through famine, from anarchy.

The Dangers of International Governmental Loans

By OSCAR T. CROSBY

Formerly Assistant Secretary of the United States Treasury

LET us assume *some* settlement reached in the matter of war-claims against Germany and her late Allies. We shall then have governments related to each other as creditors and debtors, in specific amounts, and on a scale never before known.

DEBTOR AND CREDITOR GOVERNMENTS

United States.—The United States will appear as a lender only—not as a borrower—holding approximately ten billions of dollars of the obligations of our associates in the war. The largest claim runs against Great Britain; France is next in order, then Italy. Russia, and certain smaller powers owe us considerable sums.

Great Britain.—Great Britain will appear as debtor to the United States in a large sum (about four and a half billions), and, in much smaller sums, to various neutral Powers. Her credit account with Allies will be substantially twice as great as the debit, Russia, France and Italy being the chief debtors. She will also own a large portion of the enemy indemnity bonds.

France.—France will appear as debtor to Great Britain and ourselves in nearly equal amounts (about \$2,000,000,000 each)—and enough more to neutrals to bring her total to \$6,000,000,000, in round figures. She will be a creditor to Allies in sum approximately one-third her debits, unless the claims of French citizens for pre-

war loans to Russia be included. The government has, in fact, practically adopted these claims, which will stand on as high a plane as any other debts of a reconstructed Russia. France will also have received the largest single portion of enemy obligations.

Italy.—Italy will owe approximately four and a quarter billions—more than one-half to Great Britain, and nearly all of the remainder to us. She will have received considerable portions of enemy obligations.

Belgium.—Belgium will appear as a debtor for about \$1,400,000,000, in equally rough amounts to Great Britain, France and the United States. She will have received a large portion of the German indemnity bonds.

Greece, Jugo-Slavia and Roumania.—Greece, Jugo-Slavia and Roumania will appear as debtors to their bigger brothers in the fight, and will have received comfortable slices of the indemnity loaf.

Poland and Tchoko-Slovakia.—Poland and Tchoko-Slovakia will owe relatively small sums, unless the extravagant wars, still maintained by Poland, should result in large debits not yet made known.

Russia.—Russia will owe about three billion dollars to Great Britain, about one billion to France (excluding pre-war debt above mentioned) and approximately two hundred million to us. Her financial relations with the new border states, as they will be fixed at the end of the existing,

contests (March 30, 1920), cannot be forecast, but the sums involved are not likely to be large in comparison with the great figures we are considering. Russia will probably not hold any recognized claims against the former Central Empires.

Germany.—Germany will be burdened with an enormous external debt, and, although she made great advances of money to her late Allies, will probably have nothing whatever on the credit side of her international ledger.

Austria-Hungary, Turkey and Bulgaria.—Austria-Hungary, Turkey and Bulgaria will be in the same plight

Japan.—Turning to the East, Japan emerges as a creditor nation, but her balance sheet will not contain such extravagant figures as appear in the American-European situation.

China.—China will be a debtor nation, quite capable of paying all claims against her, unless she be hamstrung by outsiders, or too much bedevilled by insiders.

South American Countries.—South American countries, in so far as external relations are concerned, will be found in varying states—all the way from affluence (as in the Argentine Republic) to a strained, though embarrassed solvency (as in Brazil).

Doubtless, the first thought suggested by the outlines just given is that a clearing-house operation should at once be undertaken. Indeed, something of that sort would promptly be done if governments possessed the intelligence and elasticity in action of the average man of affairs. But even the most agile trader would hesitate somewhat more in dealing with the case before us, than with one

in which cash payments are involved, and in which all checks are equally certain to be paid on presentation. The transaction considered actually involves long-term notes whose makers are but dubiously solvent, and are sovereigns not subject to any well-defined judicial control.

Moreover, after all possible shuffling of the cards, the United States and Great Britain would emerge as net creditor nations, while Germany and her satellites would appear as net debtors. That statement alone justifies, I think, that most serious attention be given to the *principles* which it is my desire to emphasize.

DANGERS IN OWNERSHIP BY ONE NATIONAL TREASURY OF LARGE OBLIGATIONS OF OTHER NATIONAL TREASURIES

These principles are, *first*, that considerable debts held in one national treasury against other national treasuries constitute a grave menace to international peace, and, *second*, that this danger may be much diminished by transferring foreign governmental obligations out of the national treasuries and into the hands of the public throughout the world.

Establishment of a Financial Balance of Power.

It is a commonplace in history that loans to relatively weak nations have been used as a means for interfering in the domestic affairs of the debtor. The origin of the thing *may* have been innocently commercial; the first political pressure concerning it *may* have been made in the sole spirit of the collecting agency, but how often has the *dénouement* of the play been almost

naked conquest! Dealings of this sort, seen in various stages, appear in the contemporary history of China, Turkey and Egypt. The results of such intermeddling (however justifiable it may seem in a particular case) are usually some form of force used against the borrower, and many heart-burnings among the lenders and their rivals for world power. As in the case of the famous six-Power loan to China, governments that cannot themselves advance a sou, insist that their nationals be given a place as creditors. It is thus hoped to establish a financial balance of power, which, in turn, is hoped to insure against special political and economic privilege in the debtor's country.

The weakness of the borrowers, in the classic pre-war instances, tended to minimize the possible evil results of the system. Strong lending nations might, indeed, squabble over "compensations"—but some compensations they could force out of the borrower. It was scarcely necessary to contemplate armed resistance on his part, and all the dire consequences of fire lighted near to one's own dwelling.

Compared with these earlier cases, the situation created by the Great War is far more menacing.

Debtors and creditors alike are proud and powerful nations. Some have been accustomed to play the master's rôle. All are sensitive to foreign criticism. Temperament and tradition will inspire the fiercest resentment against him who would say, "You should not do this or that thing—you are about to waste the money you owe me!"

Those who have borrowed from us

have various colonial enterprises in hand. These may be called the fruit of imperialism, or of commendable commercial expansion, or of humanitarianism (of the White Man's Burden variety) according to the prejudices, the interests or the hypocrisy of various phrase-makers.

In any case, such ventures will almost certainly lead our debtors into military expenditures beyond those required by a policy of quiet self-containment.

They are also making, or about to make, various experiments in state ownership. As to these, the most ardent collectivist will scarcely prophesy anything but treasury deficits, at least in the earlier years of operation.

A protectionist revival is one of the legacies of war. Even in England attempts are being made, covertly and openly, to build the great imperial wall of which Chamberlain dreamed. That we, the wolf-tribes of the world, should experiment as we choose with protectionist doctrine applied to *our own homes*, must be granted—if only because of a necessary comity between wolves. But when we extend "protection" for our own trades around peoples whom we control by the sword, the case is different. Special privileges in foreign or colonial fields when gained by violence, must be held against violence; but that will cost money.

The British merchant marine—a magnificent monument of private enterprise in free competition—is being threatened by our alarming cry that our flag must float over our goods, cost what it may. Our subsidies will breed subsidies. The victims of infectious diseases curse each other as authors of the spreading evil. We

shall hear much of such imprecations in the future—with inquiry as to whose money is really supporting the competitors' ships.

Not only will Great Britain struggle to maintain her honestly-earned supremacy as a carrier on the Seven Seas, but she is fated to strive for military mastery of the watery fields and also of the air-ocean.

And now a new element enters into the age-long competition between fleets, whether they be peaceful or warlike. All must join in a scramble for oil. In jungle and desert and prairie, empire-builders push their adventurous way, seeking control of the precious fluid.

*Position of United States as a
Creditor Nation*

In all the directions indicated, and in others that will occur to the reader, the debtors of the United States will be spending money, while contending along almost every line with American efforts for commercial expansion. Added to the protest of our traders will be the lamentation of the very righteous among us, who feel that henceforth our power (so dangerously great!) must everywhere be employed to enforce something they will call "justice."

Even in the expression of our "holier-than-thou" views, we shall inevitably display "the unconscious arrogance of conscious wealth." Entering into this arrogance, as a part of its very constitution, will be a large ignorance of distant and complicated situations.

Thus it is that upon the platform of the creditor, whose loans are presumably jeopardized by the activi-

ties of a debtor and a rival, our ambitious politicians, our immoderate enthusiasts and our keen traders will be able to excite and exploit the popular passion of patriotism, while disturbing a hundred delicate international situations. In the stirring of this witches' cauldron of trouble, we will not appear as a peculiar people. Every creditor country, similarly circumstanced with respect to debtor countries, will produce similar phenomena, and the latter will reply to every criticism with outraged indignation. All this, because human nature is as it is.

It will be said that anticipation of such universal quarrelling is needlessly pessimistic. Yet it has already begun. Several weeks ago, Congressional discussion of the proposal that we should defer for three years collection of interest charges from the Allies was enlivened by a member who declared that Great Britain could well pay these charges if, as had been reported, she is about to spend huge sums for a conquest of the air. The same protest appeared on streamers shown in the great St. Patrick's Day parade in New York, but directed against the British naval program. Organized press campaigns are inspired by the same spirit, though the graves are still green that hide the bodies of British and American soldiers fallen together in advancing against a common foe.

So far as we are concerned, a truce to mischief-making may be accomplished by the definitive understanding in respect to interest charges just mentioned. But three years will pass very quickly. Heaven forbid that the blustering winds now blowing

should have gathered more force at the end of that respite! Another adjustment may then be required by our much-strained debtors. Who can foretell the passions that may enter into a new negotiation?

I cannot, in this paper, further emphasize the grave dangers inherent in the ownership, by one national treasury of embarrassingly large obligations of other national treasuries. Enough has been said, I hope, to show that each relation of this kind results in the exposure of national nerves of pride and interest. These nerves may be attacked on the raw by a single chauvinist, minister or legislator, and they may be thrown into acute anguish by the loud cries of priest, politician, profiteer or thoughtless populace.

Preventive Measures

Effect of Cancelled War-Debts on Debtor and Creditor Governments.—Let us now consider preventive measures against the indicated malady.

Before presenting my own views, let me advert to a proposition often heard in Europe, and acclaimed by a very few voices here. It supposes that, as between allied and associated governments, all war debts shall be cancelled. This has the merit of simplicity, and of great advantage for net debtor governments. Great Britain and the United States would be net losers. Unfortunately, however, the American mind, before consenting to this radical proposal, would certainly insist upon an inquiry into, and an assessment of value, in the various territorial, commercial and political plums which our co-belligerents have extracted from the victory pie. I do not rail against this

appropriation; I only state that it has taken place, continues now to take place, and that the plums have presumptive value, evidenced by the struggle for them. And I further say that valuation of them in specific sums, accurately determined, is impossible, and that to attempt it would result in an exchange of bitter recriminations carrying to dangerous pitch those national passions which for a time the Paris Peace Conference suppressed, but evidently did not destroy. The whole subject is full of dynamite. Even without putting "mandates" in the scales to weigh them against dollars, we shall quarrel enough about them. We cannot say, "Let a sleeping dog lie," for they will not be quiet, but let us do nothing to make the dog bite.

My own suggestion runs as follows:

Settlement of Enemy War Indemnity.—First, the enemy war indemnity, and its distribution among the Allies should be fixed at the earliest possible moment. If, ten years hence, it should appear that a few more millions of marks *might* have been laid, let us not lament over the error. I shall not consider here the proper amount to be laid. I urge only that this prime question should not be left open, as may be done under the Treaty, for a long period. Objections to that course are obvious.

Settlement with Germany.—Second, the determination should be based on an estimate of total amounts that Germany can be expected to pay in six successive periods of five years each, in an ascending scale of periodic payments.

Obligations of Varying Denominations.—Third, these amounts should

be represented by obligations of varying denominations, some at least as low as five hundred dollars, bearing relatively high rates of interest, with appropriate sinking-fund provisions; the total to be paid in interest and principal not to be affected by the interest rate, which should be high enough to attract private purchasers throughout the world.¹ There is in all of us a speculative spirit, expressed in some part of our investments, however conservative we may be in respect to the balance. It is this spirit which furnishes money to nearly all new enterprises, and to old enterprises having exceptional need for funds. It is to this respectable speculative spirit that we should now turn in order to make a wide "spread" of national debts.

Negotiable Obligations.—Fourth, all inter-ally war debts, not cancelled by clearing-house operation to be similarly expressed in negotiable obligations.

Exchange by United States of Claims against Allies for Enemy Obligations.—

Fifth, the United States to offer to exchange our claims against Allies for enemy obligations received by them, up to the total held by us, if corresponding indemnity bonds are held by our debtors.

Offer of Residuum War Obligations to Private Investors.—Sixth, any residuum of war obligations held by one national treasury, against another, after all exchanges are completed, to be offered continuously, until sold, to private investors throughout the world, the seller making no indorsement of his

debtor's paper. Some of those who have borrowed from us might not accept our offer of exchange, preferring to try to realize cash from German obligations, while deferring to as remote a date as possible final payment of their debts to us. We should then be selling Allied, instead of enemy obligations to the public. If our offer were accepted in its entirety, there would be ten billions less to float on the world's market, than if it were rejected. In either case, governmental promises to pay would be scattered "from China to Peru," and direct claims of one government against another would no longer threaten our peace.

In the long run, large portions of these obligations would doubtless drift into the country of origin, thus happily transforming (*pro tanto*) an external into an internal debt. If this process were complete, and if unfortunately the obligor should find it necessary to ask an accommodation with respect to these obligations, only a slight shock, if any, to international relations would result. The disturbance would undoubtedly be much greater if appeal for modification of terms were made to large bodies of foreign holders. Indeed, the governments of these holders might, if they chose, take up the cudgels for their citizens, and produce, in part, the political strains which we are endeavoring to avoid. But, with a wide dispersion of the holdings, we may count upon diversity of political interests among the governments of the holders, considerable delay in making an accord of action, and, in general, *avoidance of volcanic procedure by any of them.*

¹ A modification of this plan may be found in the issue of annuities, for various periods up to thirty years.

You may ask then, "What security will purchasers have as to payment of the obligations in question?" They will have the only security that is worth while in dealing with a sovereign state—that is our well-founded belief that "Honesty is the best policy." Self-interested desire to maintain national credit affords, in the case of the great governments under con-

sideration, a better guaranty for their obligations than any other that can be devised. To use the ultimatum and the dreadnaught in running a collection agency—that way madness lies.

The proposition I make will not insure the world's peace, but it will dissipate some of the clouds that blacken the sky.

The Sequence in War Prosperity and Inflation

By ALVIN H. HANSEN, PH.D.

University of Minnesota

PROSPERITY and depression, like most words in common use, are very elusive terms. The average university sophomore is fairly certain that he knows precisely what they mean, yet a little questioning soon reveals the fact that he is quite at a loss to give the words definite content or to state the fundamental criterion by which one may determine the one or the other. It becomes necessary, then, to brush aside some of the loose thinking and popular fallacies that prevail.

THE CYCLE OF PROSPERITY AND DEPRESSION

In the first place, industry is generally thought of as running along on a normally level course of prosperity, sooner or later, by accident as it were, to be plunged into the abyss of deep depression. Statistical investigation shows that such is not the case. On the contrary, industry continually rides a sea of undulating waves, now riding the upward waves of prosperity, now turning the crest of the crisis, now sailing the downward wave of depression, and finally trimming its sails in the trough of the wave in preparation for the next cycle. Neither prosperity nor depression are static conditions. They are dynamic phenomena always changing into something else. Prosperity inevitably develops into crisis, crisis into depression, depression into recovery, and recovery into prosperity.

Inflation and Prosperity

Another popular fallacy relating to prosperity and depression is that everyone is benefited by prosperity, and likewise everyone is adversely affected by depression. But society is made up of a great complex of industrial groups and classes, and the changes taking place in the industrial cycle by no means affect all alike. This is especially true when such profound changes take place in the cyclical movement of industry as have taken place in the war period under discussion. In fact, this opposition of interests has been so keenly felt during the last few years that it has served to obscure in the popular mind the meaning of the term prosperity. Has the war been a period of prosperity? Certainly not to the classes with fixed incomes, to the investing class or to the salaried class. It therefore turns out to be a considerable shock to many people to be told that a period of rising prices is uniformly a period of prosperity, and a period of falling prices a period of depression. To most people, at the present time, falling prices would appear a consummation devoutly to be wished, but they certainly do not think they want depression.

What they fail to realize is that the wheels of modern industry are controlled by the compelling power of profit making. Industry goes or stands still in accordance with the profit making advantage of the business

entrepreneur. Since modern industry is controlled by the entrepreneurial class, whatever period is profitable to them must necessarily be a period of great industrial activity and prosperity, regardless of how other classes may be affected.

Now a period of rising prices is always a period of profit making, and this is true particularly for the reason that in a period of rising prices the spread between costs and selling prices is widened. Wages and rents particularly lag behind selling prices, and thus the margin of profits is increased. The opportunity for profit making thus afforded stimulates production and industrial activity ensues. Thus the process of producing goods is subordinated to the process of making profits, and the prosperity of society is viewed through the spectacles of the profit receiving class.

The Enigma of Unemployment

Here we encounter the greatest enigma of modern industrial society, viz., the failure of the existing industrial organization, except in brief periods of the very greatest prosperity, to utilize to the full its productive power. Much is said about the scarcity of labor and the lack of industrial equipment, yet it is estimated by Secretary of Labor Wilson that there are from one to three million workmen who are employed or unemployed according to our position in the cycle of prosperity and depression. Another estimate¹ places the figures at from one to four and one-half million. Everyone is familiar with the spectacle of plants running at low percentage

capacity. The industrial cycle is an index of the extent to which we are utilizing to the full our productive power. In recent decades, probably, there have been only two periods in which we have measurably approached our full power to produce, the period of intense prosperity in 1906 and 1907 and the period of the recent war. The extent to which we normally fail to utilize our productive capacity becomes evident when we consider the increase of production that took place during the war despite the withdrawal of over 4,000,000 men into the service. The reliable data worked out by Wesley C. Mitchell² indicate that our physical production in the war years 1917 and 1918 exceeded our physical production in 1913 by 14 per cent and 16 per cent respectively. It has been estimated³ that this increase in production was sufficient to cover the cost of the war in tangible goods without reducing either our normal supply of capital equipment or the average standard of consumption.

The cycle of prosperity and depression is the record of industrial activity. In the modern industrial society this cycle is a continuous process which finds its expression in the movements of money, credit, prices, profits and production. An analysis is here presented of monthly data pertaining to the above mentioned movements for the years 1915-1919. The following series are included in the study:

1. Ratio of reserves of Federal Reserve Banks to net liabilities.

² Mitchell, *History of Prices During the War*, Summary, War Industries Board, Price Bulletin No. 1.

³ Viner, "Who Paid for the War," *J. of Pol. Econ.*, January, 1920, p. 58.

¹ Hornell Hart, *Fluctuations in Unemployment in Cities of the United States, 1902 to 1917*, Helen S. Trounstone Foundation, Cincinnati.

2. Total reserves of the Federal Reserve Banks.

3. Total deposits of the Federal Reserve Banks.

4. Federal Reserve notes in circulation.

5. Deposits of New York clearing house banks.

6. Loans of New York clearing house banks.

7. Money Rates on 4-6 months prime commercial paper.

8. Prices of twenty industrial stocks.

9. Prices of twenty copper stocks.

10. Industrial dividend payments.

11. Production of pig iron.

12. Production of copper.

13. Unfilled tonnage of U. S. Steel Corporation.

14. Exports.

15. Wholesale commodity prices.

The data pertaining to the Federal Reserve System were taken from the *Commercial and Financial Chronicle*, and the figures for the other series were obtained from *Babson's Desk Sheet of Tables and Charts*. The actual figures, with the exception of the ratio of reserves to liabilities, were in each case reduced to relative figures or index numbers for the purpose of comparison. The months of June and July, 1917, constitute the mid-point of the period under consideration, and the average of the figures for those two months has, in each series, been taken as the base. It will be noted that the first half of the period corresponds substantially to the period of American neutrality, and the last half is the period of American participation in the war.

MOVEMENTS OF THE MONEY MARKET

Prior to the establishment of the federal reserve system the surplus

reserves of the New York clearing house banks constituted the primary index of the condition of the money market. Since the establishment of the reserve system, the reserves of the member banks are replenished through the process of re-discounting at the federal reserve banks. Bank credit rests, therefore, ultimately on the reserves of the federal reserve banks and not on the reserves of the member banks.

Table I gives the index numbers worked out as explained above for money rates, total reserves of federal reserve banks, deposits of federal reserve banks, federal reserve notes, loans and deposits of the New York clearing house banks, and the actual per cent for the ratio of reserves to liabilities. Federal reserve notes do not begin to assume any large proportions until the middle of the period under consideration. The ratio of reserves to liabilities is limited to deposit liabilities for the months June to November, 1917, otherwise liabilities include federal reserve notes in circulation.

It will be noted that reserves expanded enormously during the greater part of the period. This was made possible by the huge importation of gold, amounting to a total of \$1,200,000,000, during the period of American neutrality. The jump in reserves immediately following our entrance into the war resulted from the rapid impounding of gold into the federal reserve banks. Under ordinary conditions it is usually found that surplus reserves rise with an increase in reserves, and money rates, therefore, usually move in inverse ratio to reserves. In this case, it will be noted that money rates and reserves moved

TABLE I. MONEY MARKET CONDITIONS

(Index numbers, base June-July, 1917; actual percentages are given for the ratio of reserves to net liabilities.)

	Ratio of reserves to liabilities	Money rates	Reserves federal reserve banks	Deposits federal reserve banks	Notes federal reserve banks	Deposits New York banks	Loans New York banks
1915							
January.....	93.3	80.6	19.3	19.6		59.7	57.1
February.....	96.7	75.6	20.9	20.2		63.7	59.4
March.....	91.0	70.6	19.8	20.1		66.0	61.6
April.....	89.3	75.6	19.8	20.6		67.6	62.0
May.....	93.3	74.0	20.6	20.4		67.9	62.0
June.....	97.4	74.0	22.8	20.9		71.1	67.7
July.....	91.8	73.1	21.6	21.4		73.8	66.9
August.....	88.2	73.1	21.6	22.2		76.9	60.2
September....	88.7	68.0	23.5	23.1		81.6	72.2
October.....	87.5	65.5	23.9	25.1		91.8	78.6
November....	86.9	63.0	26.9	23.9		94.1	82.7
December.....	89.1	65.5	27.2	23.9		94.5	83.8
1916							
January.....	80.8	63.0	27.4	31.8		96.5	85.0
February.....	80.4	60.5	26.9	31.2		97.3	85.7
March.....	76.0	63.0	26.6	31.7		96.5	86.1
April.....	72.2	65.5	24.3	31.8		96.1	86.8
May.....	70.1	65.5	27.0	36.4		93.4	86.1
June.....	73.4	74.0	30.4	37.3		91.0	84.2
July.....	69.9	83.2	28.6	33.2		87.1	81.2
August.....	70.6	75.6	28.0	38.6		88.6	81.9
September....	71.0	73.1	29.7	39.2		91.8	85.3
October.....	72.8	73.1	30.6	40.7		92.9	86.5
November....	75.3	70.6	36.0	46.3		95.7	88.3
December.....	70.7	80.6	34.3	47.0		91.8	86.1
1917							
January.....	76.3	70.6	40.3	49.9		99.2	83.7
February.....	73.6	83.2	38.5	49.3		101.2	90.6
March.....	81.2	90.7	43.1	51.1		103.1	92.9
April.....	74.2	90.7	41.5	57.3		105.1	95.1
May.....	67.8	98.3	76.3	74.1		100.4	93.6
June.....	68.4	103.3	93.7	100.6	96.8	99.6	99.6
July.....	73.8	96.8	106.3	99.6	103.3	100.8	100.7
August.....	79.9	100.8	105.7	97.4	113.9	101.5	101.1
September....	74.5	108.4	109.5	97.3	129.6	100.4	103.4
October.....	70.3	113.4	116.6	112.2	164.2	116.4	124.4
November....	62.8	110.9	126.0	129.9	196.5	132.4	166.2
December.....	63.6	113.4	127.5	127.9	237.5	136.3	164.6
1918							
January.....	65.4	115.9	134.0	129.0	239.0	141.4	159.9
February.....	66.0	115.9	137.8	124.0	254.5	139.8	156.4
March.....	63.4	121.0	139.9	131.5	276.8	142.2	160.5
April.....	61.3	121.0	142.2	136.0	295.5	144.5	163.5
May.....	62.0	121.0	148.5	139.5	310.0	142.9	168.4
June.....	63.4	121.0	148.8	144.0	324.8	144.5	166.5
July.....	57.9	121.0	153.7	151.0	378.5	139.8	162.0
August.....	56.4	121.0	155.4	149.5	405.0	139.8	165.8
September....	51.6	121.0	155.8	163.0	454.0	144.5	168.8
October.....	49.6	121.0	157.5	180.5	486.0	146.1	173.7
November....	50.0	121.0	159.3	168.0	497.0	146.5	175.5
December.....	50.6	115.9	160.4	165.9	516.0	149.6	172.9

TABLE I. MONEY MARKET CONDITIONS—*Continued*

	Ratio of reserves to liabilities	Money rates	Reserves federal reserve banks	Deposits federal reserve banks	Notes federal reserve banks	Deposits New York banks	Loans New York banks
1919							
January.....	53.0	108.4	163.8	164.4	474.0	152.3	176.7
February.....	51.3	103.3	164.5	171.2	478.0	147.2	176.7
March.....	51.6	108.4	166.0	179.4	486.0	151.2	180.1
April.....	51.7	108.4	168.0	169.8	493.0	154.3	180.8
May.....	51.8	105.8	169.2	172.5	487.0	157.8	183.8
June.....	52.5	110.9	168.0	183.0	482.0	155.1	181.6
July.....	50.5	110.9	162.0	175.0	485.0	157.0	184.2
August.....	50.7	108.4	161.0	171.0	499.0	155.8	184.2
September....	51.0	108.4	164.5	177.8	513.0	161.3	191.7
October.....	47.9	105.8	165.8	190.5	532.0	162.5	199.6
November....	45.5	113.4	162.4	202.8	552.0	162.5	195.5
December....	44.8	118.4	160.5	194.2	592.0	159.0	191.3

together, for, while reserves were mounting up, deposits and federal reserve note circulation were increasing at a still greater rate. This is indicated by the movement of the ratio of reserves to liabilities which progressively declined in spite of the expansion of reserves. Therefore, even though reserves rapidly accumulated, the money market became tighter and money rates became higher. Only during the year 1915 and the early part of 1916 did the ratio of reserves to liabilities run very high and money rates low. Beginning with the latter part of 1916 and extending to the close of 1918 the demands made upon the money market were so great that in spite of added reserves the ratio of reserves to net liabilities declined and money rates moved up. Further inflation of banking credit was measurably stopped by the close of 1918. The ratio of reserves to liabilities ran nearly uniform from September, 1918, to September, 1919, and for the first ten months of 1919 money rates ran correspondingly on a fairly level course. At the close of the year banking credit was still further strained and rates became higher.

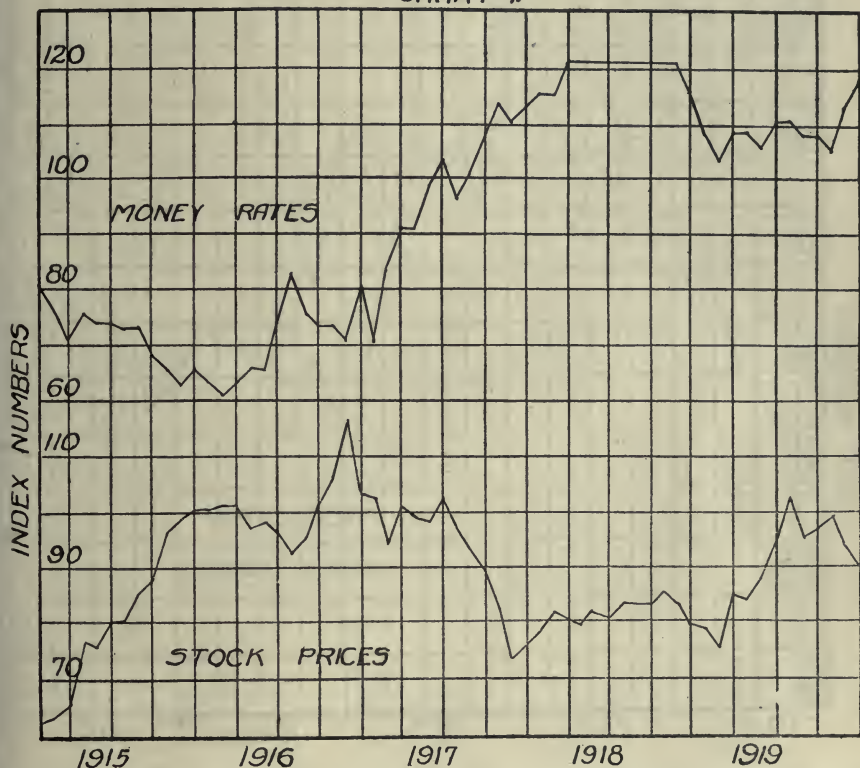
Money Rates, Stock Values and Profits

The relative movements of money rates and industrial stock prices are shown in Chart I. The index numbers for the industrial stock prices were constructed by averaging the prices of twenty industrial stocks and twenty copper stocks. The curves are placed in juxtaposition to bring out more clearly the inverse correlation. The two most fundamental factors affecting stock values are the current rates on the money market on the one hand and the trend of corporate profits on the other. Stock prices move in inverse ratio to the former and in direct ratio to the latter as appears in Chart II, since production may safely be accepted as a reasonably accurate index of the trend of profits. The production index numbers are the simple arithmetic average of production of pig iron, production of copper, unfilled tonnage of the U. S. Steel Corporation, and exports. It is an index, therefore, of the production of war materials rather than of production in general. General production of course did not increase in any such proportions. A comparison was made

of the production index with industrial dividend payments averaged quarterly as a further evidence of the trend of profits. Production reached the trough of the wave in December, 1914, and rapidly rose during 1915 in response to the war demand of the allies. The period of maximum production of war

The two charts then indicate the relation between stock prices and money rates on the one hand, and production and profits on the other. Assuming profits as constant, stock prices would fluctuate inversely with the movement of money rates. Assuming money rates as constant, stock

CHART I.



materials was during 1916 and the first half of 1917, the peak being reached toward the end of the period of American neutrality. With the readjustments incident to the entrance of the United States into the war and the consequent withdrawal of men from industry, production declined somewhat, but rose again during 1918. The last year brought a heavy decline,

values would fluctuate directly with the movements of profits. The influence of both factors are apparent in the trend of stock prices and, on the whole, tend to reinforce each other.

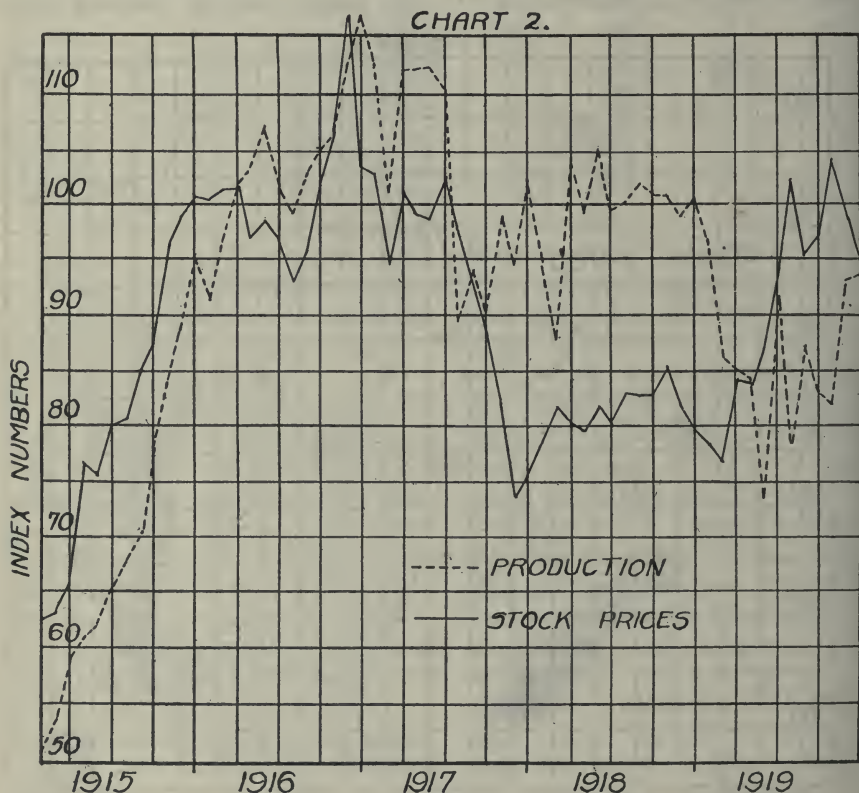
INFLATION AND PRICES

The remarkable expansion of production occasioned by the European demand for our goods brought with it

inflation of bank credit. The Europeans paid for our goods, mainly, in two ways: (1) by sending us gold and (2) by selling us securities. This enormous importation of gold resulted in a surplus of reserves and forced a decline in the rate of discount during

inevitable result was a general rise in prices.

Chart III shows the curves for inflation of bank credit and for commodity prices at wholesale. The credit inflation index is a simple average of the deposits and loans of the New York



the year 1915. The banks were in a position to generously extend loans, the war industries rapidly expanding needed funds, and the purchased securities were at hand to serve as convenient and adequate collateral. Thus the European war trade furnished not only the stimulus for increased production but also the means for rapid inflation of bank credit. The

clearing house banks. This average has been used in preference to the credit expansion of the federal reserve system because of the fact that the reserve system practically started from nothing at the beginning of our period, and, therefore, the relative expansion that took place in that system was out of all proportion to the general expansion of credit in the country as a

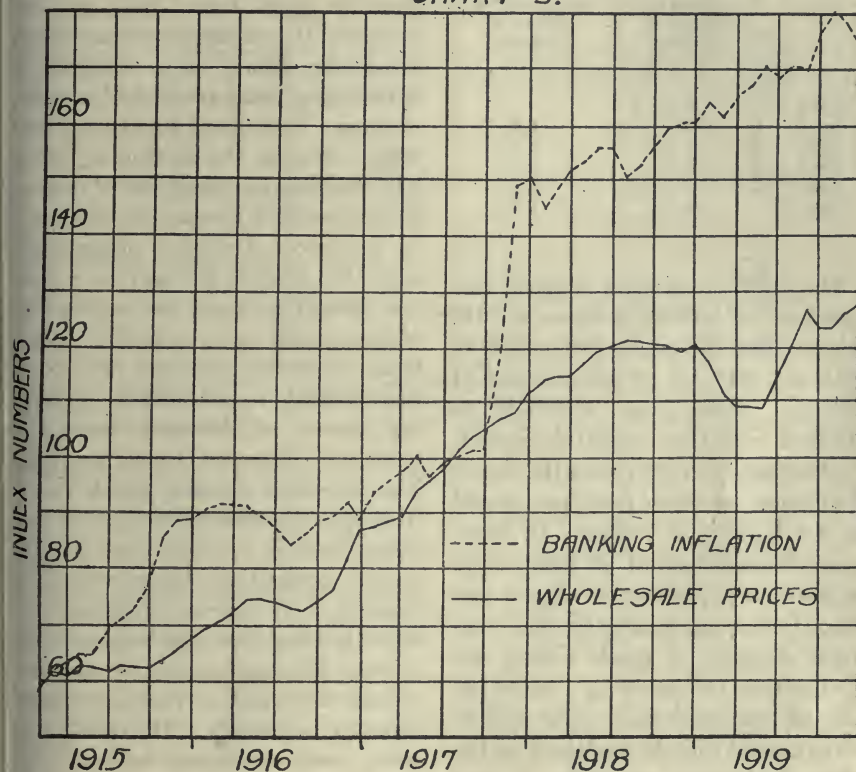
whole. The price index is Bradstreet's index of wholesale prices.

Inflation and Shortage of Goods

The opinion appears to be held quite generally that the recent enormous advance in prices is the result of a

index of physical production, Viner estimates⁴ that the aggregate increase in production from January, 1917, to May, 1919, was 10.8 billions of dollars in terms of 1913 prices. The total estimated cost of the war for the corresponding period in terms of

CHART 3.



shortage of goods occasioned by the war. If Mitchell's estimate of the increase in physical production during the war is correct it appears that after subtracting the war materials consumed by the United States, as well as the excess of materials sold to our allies, the physical product or supply of goods remaining is little if any lower than before the war. Using Mitchell's

1913 prices he finds to be 10.4 billions of dollars. If this estimate is reasonably correct, no shortage of goods occurred in the United States because of the war.

It may still be argued, however, that the enormous excess exports of the period 1915-1919 must have resulted in a shortage of goods. Following is an

⁴ Viner, *J. of Pol. Econ.*, Jan. 1920, p. 58.

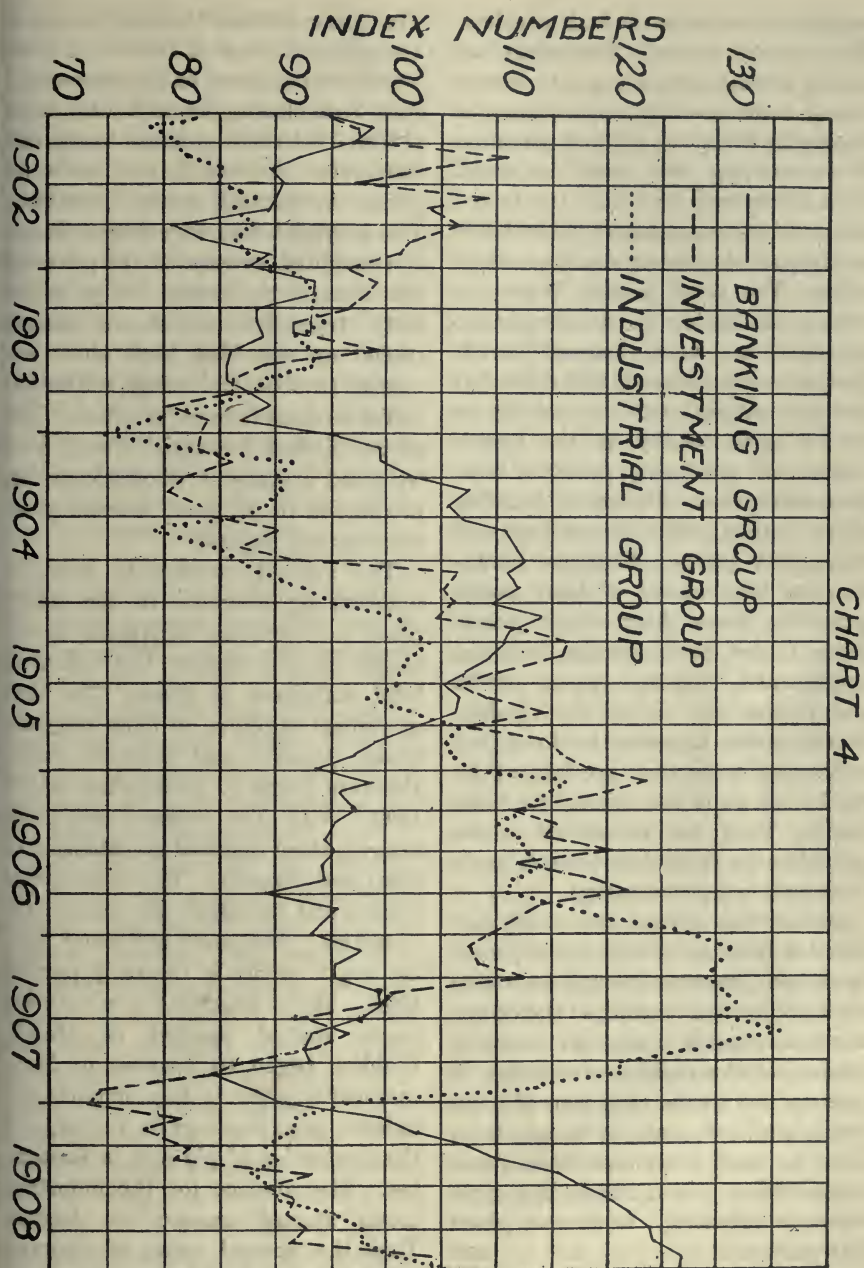
estimate of the value of our excess exports in terms of 1913 prices, using the wholesale price index of the Bureau of Labor Statistics as the means of conversion to the 1913 basis.

Year	Exports on basis of 1913 prices in billions of dollars	Excess war exports on basis of 1913 prices in billions of dollars
1913	2.5	
1915	3.6	1.1
1916	4.4	1.9
1917	3.5	1.0
1918	3.1	0.6
1919	3.7	1.2

The total excess war exports was therefore 5.8 billions in terms of 1913 prices. But the excess production of 1915 and 1916, viz., 7 per cent and 11 per cent respectively according to Mitchell, more than equals this amount. On the basis of 1913 prices the excess production for these two years would be 6.2 billions of dollars. If, then, these estimates are at all reliable the extraordinary production of the war years fully compensates for the supposed shortage of goods arising out of exports as well as our own consumption of war materials. The rise in prices cannot then be explained on the basis of shortage of goods. It can only be accounted for on the basis of inflation of currency and credit. The importation of over a billion dollars of gold, and the credit creating capacity of the federal reserve system made enormous inflation inevitable in the absence of rigid governmental regulation. Thus prices rose with the volume of currency and bank credit.

THE NORMAL SEQUENCE IN THE BUSINESS CYCLE

The normal sequence of the banking, investment and industrial movements of the business cycle are completely upset by the unusual conditions arising out of the war. Normally, as found in a study made by the writer of monthly data from 1902 to 1908 inclusive, the sequence runs as follows: Depression brings on a reduction of outstanding bank credit and a return of money from hand to hand circulation, following the decline in prices. The resulting accumulation of reserves is the essential feature of the period of recovery. Bankers progressively lower the rate of discount to a point low enough to make the employment of bank credit again profitable. Bank loans are readily obtained, new securities are freely issued, and the purchasing power of business enterprises increases. The cycle is moving upward. The increased demand which results from the expansion of bank credit soon shows itself in a rising stock market, greater production, larger volume of imports, more general employment of labor, increased immigration and rising prices. Rising prices and the increased volume of production result in increased earnings and profits. The demand for bank credit continues to be strong while prices are rising. But rising prices result in more money being drawn out into hand to hand circulation. There follows, therefore, an actual diminution of reserves at the very time when bank credit is being extended. It therefore becomes necessary not merely to stop the expansion of bank credit, but actually to reduce the outstanding volume. The demand for bank credit is not lacking but the



supply is strained to the limit of safety. The banks protect themselves by raising the discount rate and by scrutinizing more carefully the solvency of borrowing firms. A gradual reduction in outstanding bank credit is forced. This movement results in the forced sale of securities because of the inability on the part of borrowers to renew their loans. The stock market begins to decline, trading on the stock exchange is reduced and bank clearings fall off. New securities are issued with difficulty, and this, coupled with the inability to obtain loans readily at the banks, reduces the purchasing power of business enterprises. Presently, building falls off; then production, imports and commodity prices. Thus the limitation on the volume of bank credit gradually drags down stock prices, shares traded, bank clearings, building, employment, imports, prices, profits and production. When the diminution in profits appears, the downward movement is further accelerated by the letting up in the demand for bank credit. Thus the downward movement, like the upward movement, tends to become self-perpetuating.

But as the upward movement culminates because of the strain placed upon bank reserves through an undue extension of bank credit, so the downward movement brings on recovery because of the rapid accumulation of reserves due to the reduction of bank credit and the return of money from hand to hand circulation consequent upon falling prices. Thus the cycle develops inevitably from one phase into another.

The above analysis finds verification in Chart IV. Seasonal fluctuations have been eliminated in these curves.

The curve labelled Banking Group is a weighted average of reserves of New York clearing house banks, deposits of New York clearing house banks, loans of New York clearing house banks, call loan rates (inverted), and rates on prime commercial paper (inverted). The curve labelled Investment Group is a weighted average of the prices of ten investment stocks, the prices of forty transportation stocks, shares traded on the New York stock exchange, total bank clearings, and liabilities of business failures (inverted). The curve labelled Industrial Group is a weighted average of wholesale prices, production of pig iron, railroad gross earnings and imports.

The general movements may be followed by reference to the chart. Since the separate individual movements do not appear the following brief statement is given. The first movement appeared in bank reserves, loans, deposits and discount rates. Reserves began to accumulate late in 1903. With the upward swing of reserves there followed an extension of loans and deposits. The extension of bank credit increased the demand for securities. The stock and bond market began to rise in the early part of 1904. The average for the investment group started upward in March. Building began to increase in May, commodity prices in July, imports and railroad gross earnings in August, and the production of pig iron in September. The average for the industrial group started upward in August. Thus the upward swing of reserves, and the expansion of loans and bank credit, consequent upon the easing up of the rate of discount, pulled up one

by one stock values, prices, profits, and production.

The downward movement again began with reserves, deposits, loans and discount rates. The reduction of bank credit affected the security market and stock prices began to drop. The average for the investment group began to move downward in the early part of 1906. Industrial activity still continued to increase for a time, but gradually the inability to obtain bank credit readily or float new securities had its effect. Building began to decline in May, 1907, and the average for the production of pig iron, imports, commodity prices and railroad gross earnings began to fall in July.

Similar facts appear in the upward movement following the depression. The banking group started upward at the close of 1907. Stock prices followed in the early months of 1908. The average for the investment group began to rise in January, 1908. Building increased in March and the average for the industrial group started on the upward movement in June.

Here the interplay of banking, investment and industrial forces are working themselves out without external governmental interference. Industrial activity is held in check or speeded up according to the business possibilities of profit making. Only in the period of rising prices is the ability to sell at a profit equal to the productive capacity of society. Production rises and falls with prices, and prices in turn rise and fall with the ebb and flow of the money market.

What is the reason for this ebb and flow? Banking institutions alone, excepting the government, have the power to create money or its substi-

tutes, *i.e.*, to issue notes or create demand deposits. In other words, banks manufacture purchasing power. But the supply of this bank product in no way depends upon the multiplication of banks. The possible expansion of bank credit is restricted, within somewhat flexible limits it is true, by the physical volume of gold reserves in the nation and ultimately in the world. The supply of bank credit is in no way dependent upon the cost of banking, and only slightly upon the cost of production of gold since the annual production of gold is very small compared to the total supply. Therefore, banks place no "reservation prices" upon bank credit. They will sell it for whatever they can get. The price depends purely upon the demand. When loans are being reduced and reserves accumulate banks must reduce the price (rate of interest) in order to dispose of all their wares (bank credit). The reduced price of bank credit again makes production profitable. Loans are called for, securities are issued, the purchasing power of business is increased, prices rise. Selling prices rise sooner and faster than cost prices and profits are increased. The upward movement of prices for the time being releases the pressure of production on profit making. Prosperity is in full swing and continues to be until bank credit has expanded to its limit and a halt is called to the rising movement of prices. Profits decline and bank loans are reduced until a fresh accumulation of reserves starts another cycle. It is as though you threw a ball to which is attached a rubber band. The rubber band pulls back the ball with the same force with which it is thrown. And were it not

for the force of gravitation the ball would continue to bound and rebound.

The War Sequence

Thus under normal conditions, when the motive of profit making controls industrial activity, productive capacity is utilized to the full only in the period of inflation of bank credit and rising prices, and this inflation inevitably finds its termination in the limitation of bank reserves. But the war introduced a new factor in production and inflation. It was no longer wholly a question of reserves or profit making. It was a question of national need. Hence the war sequence did not run from reserves to loans, deposits, issue of securities, and thence to prices, profits and production. Purchasing power was no longer limited by the physical volume of reserves. Government credit entered the field directly in the form of paper money in many countries, and everywhere indirectly through taxation and the issue of

treasury notes and bonds. Reserves were no longer the limit of prosperity and inflation. The limit was the sky, and for proof witness the paper inflation in Europe.

The inflation arising from the war need might, no doubt, have been restricted to a considerable extent by a greater resort to taxation with less reliance on bond issues as a means of financing the war, or by the selective conscription of labor and capital for war production. But either method would have had a tendency to reduce production. The taxation method, by compelling greater economy, would have reduced the demand for goods non-essential for war purposes. And the industrial conscription method would, by compulsion, have reduced the quantity of production of such goods. In short, the greatly increased production of the war period would have been impossible without considerable inflation.

The Cause and Process of Inflation

By GEORGE E. ROBERTS

Vice-President, National City Bank, New York City

CREDIT EXPANSION AND PRICES

THE general level of commodity prices has risen since 1914 to figures about double those of that year, and bank loans and bank deposits have risen in about the same proportion. What is the connection between the volume of currency or bank credit and prices? We have one group of people contending that the rise of prices has resulted from the increased use of credit, and another group holding that the higher price level has compelled the expansion of credit. In other words, one side treats the higher prices as a result and the other side treats them as a cause. Evidently there is a relationship between the price level and the volume of the media of exchange and at least superficial reasons may be found to support either side of the argument. Once the joint movement is started, the controversy is somewhat like the old one as to which came first, the egg or the hen.

The principle involved is the same as in the historic controversy over the depreciation of Bank of England notes about one hundred years ago. Specie payments had been suspended so long that the relationship between Bank of England notes, prices and the gold standard had become obscure. Those who defended the policy of continued suspension argued that the situation was perfectly normal as far as the operations of the bank were concerned; the only trouble was that in the existing state of trade the need to make pay-

ments on the Continent caused gold to command a premium over bank notes. They insisted that there was no inflation of the circulating medium; no more notes were being issued than were required for the transaction of business, and the bank was making no loans except for proper and necessary business purposes; hence, there was nothing to do about it.

They did not realize that they had lost their bearings; they were judging the need for credit by the demands of an abnormal situation. England was off the gold basis, the paper currency was inflated and depreciated, prices were inflated and of course the demand for credit was just as great as though conditions had been normal. The famous Bullion Report, by Lord Liverpool's committee, pointed out the fallacy of judging the state of credit or of currency merely by the amount required to carry on business at the existing level of prices. That criterion is unsafe unless the price level is related to the gold standard, or some other concrete standard. To allow the volume of currency to be regulated by the demand, while the demand in turn is dependent upon values and the values are dependent upon the volume, is traveling in a circle.

Means of Reducing Inflation

Surely there can be no question that the purchasing power of a currency which has no definite relation to gold, or to any concrete standard, is depen-

dent upon the volume put into circulation. Currency issues are usually under the control of some authority and regulated to supply a circulating medium which will itself sustain a fixed relation to the standard of value and therefore a normally stable level of prices, but where not regulated according to this policy, but simply paid out upon governmental expenditures, the purchasing power inevitably declines. Every additional issue dilutes and diminishes the value of all that is outstanding. Once issued it stays out until it is redeemed, not necessarily in gold, but by cancellation which involves a contraction of credit. If the notes are issued by a central bank it is in the process of granting credit, and the notes may be retired in payment of the credit. But this means that the only way to reduce inflation is by producing and saving wealth and applying it to the cancellation of credit.

The economic offense in printing money to carry on the expenses of a government is in attempting to get something for nothing. That cannot be done in any economic sense; there is always a settlement somewhere by somebody. The people must pay in some manner for whatever their government expends. If it prints money to meet its payments, they suffer in the corresponding depreciation of all the outstanding paper issues. If it creates and uses purchasing power in any other form of credit, the effect upon prices is the same.

This effect upon prices or, in other words, the resulting depreciation of the purchasing power of credit, follows from an attempt to use a large amount of purchasing power without any

corresponding increase in the supply of things to be purchased. The effect of inflation upon prices is not a mysterious or occult phenomenon peculiar to currency, but simply a phase of the familiar operations of the law of supply and demand. In so far as an increased supply of currency is called for by a more general state of industrial activity and a more complete industrial employment of the population, "expansion" is the proper term to describe it; "inflation" begins when the amount of credit in use is not required and offset by greater production and a corresponding increase in the amount of commodities to be handled.

THE WAR AND PRICE INFLATION

Wages and Prices

The original cause of the recent rise of prices undoubtedly was the war. It created a practically unlimited demand for man-power, equipment and supplies. The first effect was to take up whatever slack there was in the industries, and if the demand had gone no further, the effect upon wages and prices would have been but slight. But it could not be stopped at this precise point. It soon assumed the form of a competitive struggle for labor and materials. The government let the contracts for its cantonments, which were located in all parts of the country, on a cost-plus basis, and the contractors proceeded to offer wages which would attract labor from other employments. Then came the contracts for munition works, gun works, aeroplane factories, shipyards and equipment of all kinds. And the demand for labor in the ordinary industries did not fall off. The enormous expenditures of the government

poured more money into the regular channels of trade; the demand for goods for private consumption increased, and the makers of such goods struggled vigorously to hold their employes against all competitors, including the war industries. In short, there was a practically unlimited, competitive demand, playing upon a strictly limited supply of labor and materials, and a great rise of wages and prices was the natural result.

This is the basis for the contention that the inflation of credit followed and resulted from the rise of prices and did not contribute to it, but the contention goes too far. Those who hold that an increased supply of credit will promote higher prices are free to admit that it is the *use* of the increased supply, and not the mere fact that the supply is available, which makes prices rise. But they point out that if the increased supply of credit was not available it could not be used, and that under the war-time conditions, if freely available, it was certain to be used and certain to force up wages and prices. The heedless attempt to drive the industrial machine beyond its physical capacity caused the inflation. Because of enormous pressure for goods we turned into the channels of industry and trade twice as many dollars as had been in use before, each representing nominally the old purchasing power.

Bank Credit Expansion and Production

The available information indicates that production in this country increased but slightly after the United States entered the war. It increased in some lines by drawing labor from others, but not much on the whole. There was a great expansion of bank

credit, however, for the purpose of financing the competitive struggle over the limited supply of labor and materials. This expansion furnished competitors with the means to bid against each other and thus contributed directly to the rise of prices, while contributing very little, if at all, to production. We had a grand scramble for labor and materials instead of an organized scheme of utilizing our industrial forces.

If a single family, living in a position of partial economic independence, as on a farm, should suddenly face reverses or the necessity of making heavy non-productive expenditures, it would know immediately what it would have to do. It would have to work harder, produce more, live more economically, and have a larger surplus with which to meet the new demands upon it. The economic law is the same for a nation as for a family, but there is not the same ready apprehension of the facts. Our people did not understand that the outlays upon the war must be met by increased production and greater economy. They thought that they could go to the banks and borrow for the government loans and even to pay their taxes, and but for a few gasless Sundays and some economy in the use of sugar, flour and a few other commodities which we were required to share with our Allies, they expected to go on about as usual. Indeed, in business circles it was argued that business must go on as usual in order that the war taxes might be paid.

This is not written in criticism. We were no different from other peoples in this respect. There is no such popular knowledge of economic law as would be required to suddenly reorgan-

ize a nation to meet the emergency of war without inflation. That would mean the most resolute and abstemious voluntary self-denial on the part of every person, in order that the industrial resources of the country might be turned over to governmental uses, or there would have to be an arbitrary seizure of the industries and commandeering of the population. Inasmuch as the public would not understand the reasons for such a course, it may be assumed that it could not be followed without an amount of contention and dissatisfaction that would have seriously interfered with its effectiveness and perhaps lessened the power of the country in the war. In other words, the conduct of a war without more or less inflation is impossible.

Borrowing as a Cause of Inflation

This admission, however, is outside of the argument that the free use of bank credit, with the failure to coördinate and control industry, and the wholesale promotion of competition over labor and materials, contributed largely to the rise of wages and prices and the cost of the war. This contention is not answered by simply saying that the rise of wages and prices required the use of more credit. It is necessary to go back of the rise of wages and prices and take account of the fact that, while every employer was interested in increasing his own output, he could only increase his working force by hiring labor away from his competitors, and that the labor turnover had reached proportions never before approached. In the last analysis this was the situation largely responsible for rising prices and the demand for more credit. This bor-

rowing for the purpose of enlarging the output of an individual plant, but which did not increase the total production, was pure inflation.

Now that we have this inflated state of credit, how are we to get rid of it? Upon the theory of those people who hold that a supply of currency or bank credit is analogous to a supply of railway cars an increased supply of currency, having no greater influence in creating business than the latter, all of this inflation will disappear as soon as conditions in production work back to normal, or when a period of depression comes. But the analogy is unsound. There is a difference between idle money or bank credit and idle railway cars. The latter are instruments of carriage, pure and simple, but idle capital or credit can be made effective in creating business. They can be used in different ways and shifted to different fields. Their owners are never content to have them idle for long.

This great body of outstanding bank credit can only be retired as it is cancelled by earnings and savings and by liquidation of the stocks of commodities held against it. A fall of prices would reduce the amount of credit necessary to carry new stocks in the future and make cash resources go farther, but it would involve losses upon existing stocks.

Payment and Elimination.—It is difficult to make people see that the existing great volume of bank deposits must be reduced in precisely the same manner as an over-issue of paper currency would be reduced, namely, by payment and elimination. The deposits were created by the loans and should be used in part to pay the loans.

That would bring banking conditions back to where they were when the inflation began. When a man borrows \$10,000 at a bank and takes credit for it in his account, the deposits as well as loans of that bank go up \$10,000, and when he checks it out the deposits of other banks will go up correspondingly, and that \$10,000 of credit will stay in circulation, precisely as though it were paper money, until \$10,000 of real savings—capital—is devoted to its elimination.

This makes deflation slow business. The people have become accustomed to using more credit. The new banking system, which makes for a more economical use of reserves, favors a larger use of credit than under the old system, and the profits of bankers will be enhanced by having their funds fully employed. In order to secure deflation, the banks should take up the slack as fast as the demand for credit relaxes and not let it out again; but banking in the United States is on a highly competitive basis, and the probability is that when money becomes easy the bankers will reduce interest rates and compete sharply to get their funds into use.

The process of deflation is complicated also because we are involved in a world situation and subject to the play of world influences upon prices, credits and gold reserves. In the past we never lost gold in large amounts, except to Europe, and we had a considerable degree of control over that movement by reason of the fact that the European market would always take our securities at a price. Now, we have a fair degree of control over direct European demands by reason of Europe's indebtedness to us, but new

demands for gold have developed from South America and Asia. Europe owes us and we owe South America and Asia, but we cannot use our credits in Europe to settle with our creditors. The latter are drawing on us heavily and lowering our bank reserves. Our remedy is to lower our prices and sell more goods in Asia and South America.

Nominally, the United States is on the gold basis, but that is only because of the great store of gold accumulated in the past. While it lasts we will be able to maintain gold payments. That wages and prices in this country are not on a gold basis is evident from the fact that gold production is rapidly declining. Only well developed mines which have afforded an unusual margin of profit in the past can continue to operate at present costs. The coal, copper, silver and lead operators can afford to pay present mining costs because the market prices of their products have risen, but the price of gold remains 23.22 grains to the dollar, as before the war. The production of gold in the United States has fallen below our consumption in the arts, and will continue to decline until wages and prices return to the gold basis.

EFFECTS OF CREDIT RESTRICTION ON WAGES AND PRICES

With the banking system expanded to the limit of reserves and with reserves declining, the outlook is for a continued constriction of credit. It must be considered that in a growing country, like the United States, where the volume of production and trade is constantly increasing, the volume of credit is normally increasing. If the

country is to do business on the gold standard, wages and prices must be in terms of the gold standard; in other words, they must come down, and if the volume of credit is restricted they will be eventually brought down. But what will the public have to say about this credit restriction and the effect upon wages and prices? That is the next important question.

Every period of falling prices and business depression in the history of this country has brought on an attack upon the banking and monetary systems. No other public question or

question of governmental policy is so adapted to serve the purposes of political and social agitators and revolutionaries as the money question. Will the old and insidious greenback and free silver arguments be revived and the attack on the existing gold standard be renewed? Will the \$24,000,000,000 of fresh government indebtedness—the Liberty bonds recently proclaimed as the best security in the world—be paid by common consent in gold of the existing standard, as they come due, or will there be a struggle to change the standard?

Inflation

By JACOB H. HOLLANDER, Ph.D.

Johns Hopkins University

THE American citizen is swiftly awakening to the meaning and import of the word inflation in relation to every-day life. Instead of being regarded as "a high-brow fancy of the professors" to be tolerantly ignored by the public and summarily dismissed by hard-headed men of affairs, it is now generally accepted as the glaring evil of our war economy—responsible for high prices, business profiteering, speculative excesses and for the economic injuries and social injustices that make up the popular unrest with which the country is now beset.

There are definite reasons for the delayed recognition of the extent and effect of inflation. On the one hand, governmental authority has systematically obscured the fact and denied the inference. At intervals, inflation has been held forth bogey-fashion as the penalty which would follow non-adoption of the official policies. But measures, frankly inflationist in effect, have been freely resorted to whenever administrative purpose or opportunist convenience dictated. On the other hand, expert economic opinion—barring a few notable exceptions—has been slow in making its influence felt. Reaction from a false scent, concentration upon a specialized formula, absorption in governmental service and perhaps the intricacy and novelty of a new type of inflation have made the economist a less prompt, perhaps a less certain guide than in other popular economic vagaries.

PRIMARY CAUSE OF INFLATION

The indictment of inflation as a consequence of fiscal bungling in our war economy rests squarely upon the doctrine that a relative increase in the volume of currency is the cause and not the effect of rising prices. With this conclusion the great body of theoretical economists and practical financiers in this country and abroad are now in agreement. A few irreconcilables still sanction the dissent which Professor Laughlin and his disciples have so earnestly and so unconvincingly set forth. Something less than this has been invoked by the Federal Reserve Board to justify the increasing note issues of the Federal Reserve Banks. But even here there has been a perceptible weakening in asseveration; and it seems not unreasonable to assume that in about the same interval of time the advocates of the English bank restriction became converts to the doctrines of the Bullion Report of 1810, and the defenders of Secretary Chase's fiat issues yielded to the logic of greenback prices—there will be admission on the part of fiscal stand-patters that our huge creations of bank credit and note currency have been the direct cause of swollen prices.

The facts as to inflation can be set forth in a paragraph: As compared with the spring of 1914—the eve of the World War—the people of the United States are carrying on their business at the present time with practically twice as much circulating medium and

bank deposits. There has been an increase in the actual circulating medium of the country from \$3,402,015,427 on June 30, 1914, to \$5,846,171,213 on February 1, 1920; an increase in the deposits of national banks, state banks and trust companies from \$13,430,000,000 on June 30, 1914, to \$25,731,000,000 on June 30, 1919, and an increase in the individual deposits subject to check of the national banks alone from \$8,470,747,000 on June 30, 1919, to \$9,682,618,000 on November 17, 1919. Altogether it is likely that the country is now transacting its business with \$15,000,000,000 more circulating medium and deposits than five years ago.

This huge addition to the nation's money has been for fiscal convenience and not for commercial requirement. The direct consequence of the attempt to play the business game with twice as many chips has been to cut in half the commodity-buying power of the money unit, evidenced by a rise in general prices to 249 in February, 1920, as compared with 100 in 1914.

COURSE OF INFLATION

There have been three stages in the course of our inflation, each marked by an unsound administrative policy: (a) from the outbreak of the World War in August, 1914, to the entry of the United States into the great struggle, an incoming flood of gold was permitted to serve uncorrected as the basis of a towering credit structure; (b) in the eighteen months of our active belligerency lavish supplies of fiat credit by bank loans through certificate borrowing were created in the interest of fiscal opportunism instead of economic requirement; (c)

from the armistice of November, 1918, almost up to the present the policies of the Federal Reserve Board as to credit control have been frankly dominated by the convenience of the Treasury.

From the Outbreak of the World War to the Entry of United States into Struggle

Thanks to huge exports of munitions and supplies to the belligerents and the sharp decline in commodity imports from the war area, an undreamed-of stream of gold poured into the United States during the period of our neutrality. Largely in consequence, the volume of coin, including bullion in the Treasury, increased from \$2,638,496,956 on June 30, 1914, to \$3,807,161,348 on June 30, 1918. This increase in our stock of monetary gold of more than one billion dollars was magnified by the changed reserves of the banks, consequent upon the operation of the Federal Reserve System and the gold-centralizing amendment of June 21, 1917. Had our financial administrators been more skilled in world banking, prompt attention would have been paid to the significant price movements that followed such changes. Increased reserve percentages would have been urged and higher discount rates would have been imposed to check the inflating effect of the gold flood. Nothing of this was done, and we passed from the uninformed state that marked our neutrality financing to the outright error that marred our war borrowing.

From the Entry of United States into World War to the Armistice

The worst blunder of our war-time financing, in its subsequent effect upon

ocial well-being, was the Treasury's large reliance upon bank borrowing during the period of active belligerency and indeed for some time thereafter. To supply itself painlessly with ample borrowed funds and to keep the money market artificially within favorable limits, a huge volume of credit currency was created by bank loans, taking the form of issues of Treasury certificates of indebtedness in anticipation of loan proceeds and tax revenues. In another place I have described the mechanism whereby this was accomplished.¹ What could at that time only be proposed tentatively can now be asserted definitely, for events have confirmed the forecast with almost startling exactness.

Through the devices of payment "by credit," redeposit of funds, exemption of government deposits from reserve requirements and preferential rediscount rates upon war paper—anticipatory certificate borrowing from the banks, as practiced by the Treasury, involved the direct creation of a volume of additional bank credit in the form of public deposits dictated entirely as to time and amount by fiscal convenience and entirely unrelated to commercial need. Such emissions of fiat credit were dispersed among individual deposit accounts in the course of public expenditure, producing a direct expansion of credit and currency without succeeding contraction incident to certificate liquidation.

From Armistice to Present Day

The inflation due to the gold flood from warring Europe in the period of

our neutrality and to the reliance upon fiat credit in connection with war borrowing in the period of our belligerency may perhaps be explained, though insufficiently, on the score of the ignorance of our financial administrators as to the potency and far-reaching effect of the great economic forces they were invoking. Not even this justification can be found for the amazing renewal in our post-war financing of the fiatism of the war period, by the resumption of certificate borrowing eight months after the armistice in accordance with Secretary Glass's program of July 23, 1919. At the time the Treasury so resumed its policy of bank borrowing the inflationist effect of such procedure had been established to the point of outright demonstration by analysis of banking operations in the United States during the period of war borrowing and thereafter. Further, such conclusions, although ignored by our financial administrators, were accepted in every particular in this country and abroad by the great body of financial experts not actually engaged in banking operations or identified with governmental financing.

Expansion of Fiat Credit

Since August 1, 1919, the Treasury has emitted issue after issue, first of "loan" (to be distinguished from Liberty Loan or Victory Note certificate) and later, of tax certificates. These were absorbed by the banks under a form of administrative compulsion and were paid for almost entirely "by credit," that is, by the creation of additional deposit currency. Enabling the Treasury to sustain its floating indebtedness only at the expense of mortgaging prospective rev-

¹ War Borrowing: A Study of Treasury Certificates of Indebtedness. (Macmillan, 1919.)

enues and of deflecting the policies of the Federal Reserve Board, the harmfulness of such fiat financing has been even greater in monetary than in fiscal influence. With each succeeding issue there has thereby been injected into the deposit currency of the country a very considerable body of fiat credit, in the form first of government deposits, and thereafter as liberated and dispersed in public expenditure, in the form of ordinary individual deposits. Such additions to the effective circulating medium of the country, let it be emphatically restated, have not been in response to the country's business needs, but have come into being because the Treasury has elected to provide itself with funds in this comfortable way rather than undergo the effort of additional funding or taxing operations. It was much in this way, for example, that for the year ending June 30, 1919, the deposit liabilities of the national banks increased by the amount of \$948,920,000 in excess of the increase in loans and discounts—an increase which the Federal Reserve Board itself recognized as "a pure credit expansion, not called for by increased industrial activity, but occasioned by the use of the banks' credit for government financing."

In commenting at the time upon the wisdom of the foregoing policy, the present writer wrote in terms which in the light of succeeding events may, at this time, be reasonably repeated: "A bitter sequel of war dislocation is that long after armies and fleets are demobilized inflated currencies and expanded credit fabrics remain. Deflation is hard in practice and painful in effect and a democracy is not likely

to have strength or to show courage enough for heroic operation. But if the Treasury be not willing to enter upon the hard, straight course of currency contraction and credit restriction, let it at least avoid the treacherous ease of further bank borrowing. At a time when corporate flotations have been crowding in swift succession and foreign governments are standing queue-like at our financial gate, it is an incomprehensible thing that our own public borrowing should revert to a form which only the desperate exigency of wartime need should have tolerated. If to this anomaly be added the fierce quest of public and private leaders for the cause of high prices, the picturesque array of culprit elements and the soft-pedalling as to an obvious and indubitable factor—one may venture that the next-century New Zealander will musingly recognize that the lamented Phineas T. Barnum plumbed the depths of the American mind."

EFFECT OF INFLATION ON ECONOMIC CONDITIONS

The bitter penalty of inflation is that its evils are, in the main, beyond remedy. Like some tissue-destroying malady of the human body, it changes the whole functional life of the society which has suffered its ravages. We can never completely recover from the credit orgy of the past five years, nor return to the economic condition from which it has dislodged us. In the sense of a complete and final antidote, deflation is an academic term. In actual practice, the business world would never stand the stress of crumbling markets, the debtor class would never bear the burden of falling prices, the public treasury would never

endure the load of heavier debt burden.

Methods of Recovery

But if complete deflation be a counsel of perfection, there are certain wholesome things that can be done, and it is upon these that present effort should be centered. In the first place, there should be no further recourse, under any warrant or pretext to those fiscal methods and banking practices which have up to this time encouraged or permitted inflation. To tolerate an ill is one thing; to aggravate it is another. The doctrine of practical necessity may do yeoman service in defense of unsound war-time policies; it may not be as securely invoked in the calmer years that follow.

In the second place, there should be no placid acquiescence in the existing state of affairs and no tolerant unconcern as to the courses which have brought us here. Responsibility for inflation should be definitely and specifically assigned to persons and policies—this in no vindictive sense,

but that there may hereafter be complete avoidance of like error. It was the effective indictment of Secretary Chase's greenback policy that, more than anything else, has since saved us from descent to inconvertible paper. It is only by full clear recognition that the fiscal methods of the past five years have brought us to our present pass that sure protection will be afforded for the future.

Finally, though we may not fully retrace our steps or undo the largest mischief that has been done, yet our faces should be set in the true direction. The great evil of inflation has been social injustice. To atone in part for this by a gradual but courageous contraction of bank credit, with its reasonably certain consequence of an appreciating money unit as speculation is checked and production increases—is a wise and just policy. If we neglect this, under the influence of financial convenience and business advantage, we shall be dropping back again into the old vicious cycle of class exploitation and social reaction.

PREFACE

THOUGH the present extreme confusion of the whole economic life of the world must without doubt be ascribed to several different causes, the general disorder of the monetary system seems to be one of the most essential of them. It is essential in that absolute sense that it is vain to look for any real or permanent improvement of the present conditions of production and trade if not a certain stability is previously restored to the world's monetary standards. This, therefore, is a problem which ought now to command the first interest and the most arduous efforts of all those who are, either as practical bankers or as representatives of economic science, competent to judge on monetary matters.

It seems to be a rather general belief that the exchanges will right themselves fast enough when trade resumes its normal course. This would do, of course, if the different monetary standards could be restored to their old parity with gold. But this is, as everybody knows, quite out of the question. The monetary disturbances are much deeper than people think of when taking such an easy view of the problem before us. First of all a stable monetary standard must be established in each separate country. In so far the problem might be regarded merely as each country's own business. But in fixing such a standard every country will doubtless have a certain regard to its effect on the rates of exchange with other countries and prob-

ably also with gold. Further the gold policy of every big country will have its influence on the value of gold in the world and, therefore, on the capability of each country of giving to its money a fixed value as against gold. Thus the problem inevitably becomes an international problem.

The definite treatment of this problem will require a certain coöperation of the different nations. The first step in this coöperation should naturally be an international discussion of the matter. A conference of a strictly non-political character between leading bankers and economists of the world would, I venture to think, be the right *forum* for such a discussion. It seems desirable, however, that some principal points with regard to the actual nature and the causes of the disturbances as well as to the measures to be taken should previously be brought under the notice of those interested in this matter. In order thus to further an inquiry which seems to be, in the present situation, of the utmost importance for the economic future of the world, I venture to offer, on the following pages, some leading propositions on the present monetary question. I have tried to be as brief as possible and have, therefore, only given the main points of the matter. Where further explanations will be needed I shall be very glad to furnish them.

GUSTAV CASSEL.

Djursholm, Sweden, September 1919.

Some Leading Propositions for an International Discussion of the World's Monetary Problem

By GUSTAV CASSEL
University of Stockholm, Sweden

THE war has been financed to a great extent by means of creating more money: partly in the form of new issues of bank-notes or state paper money; partly in the form of extended bank-credits, which could be used as means of payment. The latter method has indirectly caused a corresponding increase of the circulating medium of exchange to satisfy the increased demand for cash for smaller payments. For the proportion between the payments in bank-credits and those in cash has been pretty constant as determined by the customs of each people.

The result of the creation of new money has been, in both cases, that a new buying capacity has been put at the disposal of the government. The total buying capacity of the community having in this way been increased without a corresponding increase in the commodities to be bought, a general rise of prices has followed. With higher prices the need for means of payment has been increased proportionally and the mass of the medium of exchange which could be kept in circulation has, therefore, at every time been proportional to the general level of prices. But the *primus motor* to the enhancement of prices has always been the creation of an artificial buying capacity.

Inflation.—In this way an inflation has taken place in every one of the countries involved in the war. The

cause has been that the government has given out more for the war than it could get at its disposal in the form of real savings; and the result has been an enforced restriction of consumption by means of which real commodities have been set free for the disposal of the government. Thus inflation has, without doubt, been an effective means of war finance; but certainly a means which has caused great hardship and done much harm.

It has often been said that inflation could have been avoided if war-finance had been based to a greater extent on taxes. No doubt there is much soundness in this view. But it ought to be observed that taxes as well as loans may be paid partly by real savings and partly by credit operations involving inflation. With sharply progressive taxation of income and capital the latter method of payment of taxes has probably had a very wide application.

The process of inflation has also extended itself to neutral countries which have been, more or less, compelled to give advances to the belligerents. As long as these advances could be kept within the limits of the saving capacity of the country they would not cause any inflation. But as soon as this limit was exceeded the advances could be given only by aid of the creation of more money and the process of inflation began. Of course, extraordinary state expenditure also has had its part in this process.

Gold has not been unaffected by this general deterioration in the value of money. The masses of paper money created have pressed down the value of gold as against commodities to something about the half of what it used to be before the war. In earlier cases when a country has flooded itself with paper money, the gold has gone out to other countries. Gold thus having become more abundant in the rest of the world has without doubt lost a part of its value, but a very insignificant part. Now, when gold has been driven out from so many and big countries, there has been very narrow space left for the superfluous gold and the following depreciation of the metal has necessarily been very severe. The dollar represents at present most truly gold. The general level of prices in the United States being about 200 as against 100 before the war, the dollar has come down to something about half its old value and the same should then be the case in respect to gold. A fully reliable estimate of the value of gold as against commodities is, however, hardly possible as long as the gold movements in the world are not free.

The inflation of any monetary standard should of course not be measured by the agio for a metal which is itself depreciated, but by the agio that has to be paid for commodities, and no country must think that it has gone free from the process of inflation because it may see its way to resume gold payments.

The depreciation in the value of gold has caused some neutral countries to protect themselves against an import of gold which would have meant a further depreciation of their monetary stand-

ard. Sweden has taken the lead in this policy but has not attained its aim. Other depreciating factors, viz., more or less compulsory loans to foreign countries and extravagant state expenditure, have been quite predominating. The Swedish crown has without doubt lost far more of its purchasing power as against commodities than the dollar.

THE CAUSE OF THE GENERAL RISE OF PRICES

Decreased Production.—The creation of more money is not the only cause of a rise of prices. A reduction of the total mass of commodities to be handled by a given stock of money must have the same effect on prices, as long as this stock of money is unaltered. Such a reduction has probably taken place during the war in most European countries. If the mass of commodities decreases by 10 per cent and the stock of money at the same time increases by 100 per cent, the result must be a rise of prices from 100 to 220. The main cause of the rise of prices has in reality, as in this example, been the increased supply of money, the reduction of the mass of commodities having always played a very secondary rôle in this respect. For such a reduction is very sharp, indeed, if it surpasses the limit of say 20 or 30 per cent. But the stocks of money have been increased by 200 or 300 per cent and in the most impoverished countries even more.

If the mass of commodities in any country diminishes by 10 per cent, the stock of money of that country ought strictly to be diminished by 10 per cent also. Where this is done no rise of prices will take place. In this sense one may say that every rise in prices

is caused by a too abundant supply of the means of payment and is proportional to this abundance.

Inflation has been defined by the Federal Reserve Board of the United States as "the process of making reductions in credits not based upon a commensurate increase in the production of goods."¹ But the omission of making reductions in credits commensurate to a decrease in the production of goods must have the same effect upon prices and may, therefore, justly be called an inflation too. Thus we may speak of "inflation" in a more narrow or in a more general sense. If there has been no increase in the mass of commodities, as is probably the case for most European countries during the war, the increased supply of money represents inflation in the narrow sense. But in a wider sense inflation is measured by the rise of the general level of prices.

Popular Ideas.—The popular idea that a shortage in commodities could cause a rise of prices which would necessitate the creation of more money is obviously a fallacy. Popular explanations of the rise of prices generally start from such factors as the high costs of transportation, the prohibition of imports, the diminished output of labor, etc. Such factors can obviously have an influence on the general level of prices only in so far as they contribute to a decrease in the total mass of commodities. But so far due regard has already been paid to these factors in the explanation here given. Other factors which used to be set forth in the discussion refer themselves ultimately to an increased supply of money. This is the case, e.g., when

people speak of high wages, high costs of raw materials, etc., as causes of a general increase of prices. In reality there can be no other independent causes of an upward movement in the general level of prices than those two which have been stated above.

THE INTERNATIONAL EXCHANGES

The Purchasing Power Parity.—The internal value or, what is the same thing, the purchasing power of the money of a country is determined exclusively by the scantiness of the supply of means of payment in that country in comparison with the volume of trade to be handled.

In any other country this money is valued proportionally to its buying capacity as against such commodities as can be exported from the first country. This valuation takes place in the money of the other country and must, therefore, be proportional to the general level of prices of that country. If trade between two countries, A and B, is free, the price of the money of A in the money of B stands consequently in direct proportion to the purchasing power of the A-money and in inverse proportion to the purchasing power of the B-money. The rate of exchange between the monetary standards is, therefore, determined, essentially, by the quotient of the purchasing power of these standards in their respective countries. This rate, which may be called *the purchasing power parity*, should always be regarded as the normal parity.

Change in Parities.—During the war the buying capacity of the different monetary standards has, owing to the overabundant supply of means of payment, been much reduced, though in

¹ *Fed. Res. Bulletin*, July 1, 1919, p. 614.

very different proportions. Consequently the purchasing power parities have undergone very important alterations and are now quite different from the parities which were in force before the war. These old parities have, therefore, now lost their old significance and can no longer in any respect be regarded as normal.

Rates of Exchange and Parities.—In the earlier part of the war, when a certain amount of freedom still was left for international trade, the actual rates of the exchanges used to coincide fairly well with the purchasing power parities. But later the sharp restrictions of the trade between nations have often distorted the exchanges. Thus if trade between two countries is more hampered in one direction than in the other, the value of the money of the country whose export is relatively more restricted will fall, in the other country, beneath the purchasing power parity. There are many instances of such abnormal deviations of the exchanges. Thus the inflation in the United States has without doubt been much smaller than in Sweden and the dollar has kept much more of its old purchasing power than the Swedish crown. The purchasing power parity must, therefore, have risen considerably above the old parity of Kronor 3:73 for the dollar. But the actual rate has fallen, under the time of the severest restrictions of American exports to Sweden, far beneath their old parity, the mean monthly rate for November, 1917, being as low as Kroner 2:55.

There are also other factors which may cause temporary deviations from the purchasing power parity, as distrust in the future of a monetary standard, outselling of the money of a country

at any price when foreign credits cannot be secured, export of money in order to evade exorbitant taxes at home, etc.

Variations in the purchasing power parity naturally have a disturbing influence on the trade between the countries. But as soon as this parity has been established at a certain level it is of no importance whether this level is high or low. Thus the export trade of a country is not hampered by low quotations of the foreign exchanges as long as these quotations correspond only to a high level of prices in foreign countries or a low level at home.

It is equally clear that every deviation of the actual rate of exchange from the purchasing power parity must be the cause of considerable difficulties for international trade. The export from A to B must be very much hampered if the money of B is quoted in A lower than would correspond to the general level of prices in B as compared with that in A. At the same time the import to A from B would get an artificial stimulus from such a quotation. Both these effects would tend to enhance the value of the B-money in A and bring it up again to its purchasing power parity, which is, therefore, the point of equilibrium for the exchanges. Of course, as long as payments can be made from A to B in gold this may cause in B a superabundant supply of money and, therefore, a rise in prices.

The present exchanges are determined, principally, by the purchasing power parity between the different monetary standards. But there are important deviations from these normal rates. These deviations will, however, mainly come to an end as soon as freedom is restored to international

trade and somewhat stable conditions have been established. The exchanges will then show only small variations about their purchasing power parities.

When the exchanges move against a country people generally explain it as a result of an adverse balance of trade. But this explanation is obviously quite inadequate if the deviation of the exchanges is considerable and has more than a temporary character. For if a country buys more from another than it sells to it the balance must be paid in some way, either by export of securities or by loans in the other country. Thus the balance of payments must, on the whole, equalize itself and there is no reason for an alteration in the rate of exchange. Should such an alteration occur it must be taken as a proof of an inflation which has brought down the internal value of the monetary unit of the country and raised its general level of prices. With an unaltered price-level and an adverse rate of exchange the country's export trade should get a strong stimulus which would tend to bring the exchange back to its normal rate. A temporary alteration in the rate of exchange could of course take place if the international trade were not free. A one-sided hampering of the export of the country would, as explained above, cause an undervaluation of its money abroad. But the explanation of the deviation of the rate of exchange from its purchasing power parity would then have to be sought in the one-sided hindrances against the trade between the countries.

It is often believed that a country which has seen the price of its money in foreign places sink very much below its pre-war parity will be able, after the

war, to restore the old exchanges only by increasing its exports. This will certainly be possible if the low quotations of the money of the country have been caused exclusively by one-sided hindrances against its exports. But if they are signs of a deteriorated internal value of the money no development of the exports of the country can better the exchanges. These will, in the future, be governed exclusively by the purchasing power parities and will, therefore, be improved only if the country succeeds in reducing its inflation thus giving its monetary unit a higher internal value.

In the popular explanations of the enhancement of prices a prominent place usually is given to the fact that prices have risen in other countries. We can now see that this explanation must be false. The exchanges adjust themselves to the general price level of each country. If then a general rise of prices has taken place in A, the value of the money of A in B will sink in the same proportion and with this new rate of exchange the higher price level in A cannot generally cause a higher price level in B. If the supply of means of payment in B is kept scanty enough the purchasing power of the B-money will be unaltered and quite independent of any inflation in A.

MEASURES FOR STABILIZATION OF MONETARY STANDARDS

The world is suffering, at present, most severely from the uncertainty of the internal value of money in the different countries and from the incessant fluctuations of the rates of exchange. Production which involves investment of capital becomes very hazardous when the future value of

money is quite uncertain. And the same holds true in regard to every international business transaction as long as nobody can tell, not even approximately, what the rate of exchanges will turn out when the transaction is completed. Under these circumstances the revival of productive activity and of international trade is very much hampered and delayed, to the greatest material detriment to the whole world and the most formidable danger for the preservation of civilized society.

Stabilize Money of the Separate Countries

Rates of Discount.—In meeting these difficulties our first aim should be to restore stability to the money of each separate country. This involves of course the cessation of all further inflation. The general means of keeping up a monetary standard is the sufficient limitation of the supply of means of payment in that standard. The regulator of this supply is the rate of discount. In the whole world the rates of discount have been too low during the war. The real scarcity of capital would have commanded a much higher interest than the 5 or 6 per cent which have generally prevailed but which have only been the result of a continual falsification of the money market. Even now, after the war, the world's need of capital is so great, in comparison with the scanty supply, that a real equilibrium can be attained only by aid of higher rates of interest than those generally prevailing.

Reduction of State Expenditures.—But even the most restrictive discount policy cannot set a limit to the inundation with money which still is going on. This steady inundation is mainly the

result of lavish expenditures of the governments, expenditures which go beyond the amount of actual savings which the state can dispose of either in taxes or in loans and which must, therefore, partly be paid for by creation of more money. Stability in the value of money can nowhere be attained unless state-expenditures are most severely cut down. With state expenditure reduced to a sound base a rational discount policy will always be able to prevent further inflation and keep up the buying capacity of the money at its present level. This stabilization of the monetary standard will, of course, be facilitated by a general return to more intense work and by the increased supply of goods which might be attained in this way. But these improvements, very desirable in themselves, will be of no help whatsoever as long as the supply of means of payment is not regulated with the decided aim of keeping the value of the unit of money unaltered.

Stabilize Value of the Unit of Money.—It is important to root out the popular fallacy that a general rise of prices can be prevented by legislation enacting maximum prices and inflicting punishments on speculators, while the government is incessantly flooding the country with fresh money and the bank-rate is kept too low.

Likewise the fallacy that it is possible to improve a monetary standard by heaping up masses of gold in the vaults of the central bank ought to be abandoned. The value of the money of any country is determined by the scantiness of the relative supply of means of payment in that money. As long as this supply is not reduced, no measures whatever can give the monetary unit a

higher value. If the money of the country is kept about par with gold by a sufficient limitation of the supply of means of payment, a gold reserve may prove useful for the actual carrying through of gold payments. But if this fundamental condition is not fulfilled the gold in the vaults is not much more than an empty show. The value of the money of a country is often confounded with the credit of that country. It is believed that a higher value can be restored to the monetary standard if only the government can re-establish its credit. According to what has been said here, this view must be false.

Restrictive Discount Policy

By aid of a very restrictive discount policy it would theoretically be possible to restore to any monetary standard its former value or a part of it. This would, however, involve an incessant lowering of prices during a long period, a proceeding which could not but have the most disturbing effect on all enterprise, hamper production and expose the country to serious depressions. Besides, every rise in the value of the monetary unit of a country means a corresponding increase in the real burden of the debt contracted in this money, an increase which most countries are not able to bear. Therefore, though small adjustments of a monetary standard may be desirable, every attempt at a restoration of the old value of money or the old level of prices should be given up where the monetary unit has lost, as in most cases it actually has, the greater part of its pre-war value as against commodities. The popular belief that prices by and by will come down to

their old level by themselves or at least without any definite measures of monetary policy seems to be quite groundless.

THE INTERNATIONAL MONETARY PROBLEM

The stabilization of the internal value of money, *i.e.*, of its buying capacity against commodities, is by far the most urgent object to be pursued by the monetary policy which we now have to enter upon. Between two nations which have attained this end a new normal rate of exchange will establish itself, this rate being determined by the quotient of the purchasing power of money in the respective countries. As freedom of trade and general confidence are gradually restored the actual rates will tend to coincide nearer and nearer with this normal rate.

The new normal rates of exchanges may be, and in some cases certainly will be, very different from the pre-war-parities. But this is a matter of secondary importance. The essential thing is that there should be *normal rates* and that these be kept as constant as possible. For this end no measure is needed other than the stabilization of the internal value of each monetary standard concerned.

It follows, however, that all countries are, in respect to the future of the international exchanges, dependent upon one another. It is, therefore, highly desirable that one country should take the lead, fixing the value of its money as against commodities and keeping it henceforth as constant as possible. The country from which this could first be expected is the United States. In their own national

interests, as well as in the interests of the world, they should give up every attempt at a reduction of their present level of prices, but on the other hand strongly resist the tendency to further inflation of the dollar which actually has shown itself in the last few months, in spite of the vain political campaign against the enhancement of prices.

With the dollar stabilized in the United States every other country could adjust the value of its money in a convenient proportion to the dollar and then, keeping its money in a constant internal value, attain a fixed rate of exchange with the United States as well as with every other country that followed the same line of endeavor.

THE GOLD QUESTION

There seems to be in all nations a desire to return to gold payments. The value of gold as against commodities having been reduced, during the war, to about the half of what it used to be before the war, the resumption of gold payments will be easy enough for those countries where the deterioration of the monetary standard has not gone much further. But a country with still more inflated money should give up every aim at a redemption of its notes in gold in conformity with the old standard. Such a country must first attain a certain stabilization of the internal value of its paper money. When this value is sufficiently fixed and foreign exchanges have settled themselves according to it, the country may take into consideration whether a new gold parity shall be given to its monetary unit.

The United States having already resumed gold payments, the dollar may be taken henceforth to represent

gold. When a country, as said above, establishes a fixed relation of its money to the dollar, it has then therewith also put its money in a fixed relation to gold and can, if it wishes, resume gold payments on this basis. If the relation lies in the neighborhood of the old parity, the country will probably try to adjust its monetary standard so as to correspond exactly to the old parity. This will be possible, *e.g.*, for England, but only at the price of the most energetic application of the above named measures for rising the value of a monetary standard: *viz.*, a high rate of interest and a severe restriction of state expenditure. Other countries will find their standards far too much deteriorated to be brought up to the old parity with the dollar and will consequently choose a new convenient parity and concentrate all their energies upon keeping their money on that parity for the future.

In so far as resumption of gold payments are thought desirable it is essential that the value of gold as against commodities should henceforth be kept as constant as possible. This is a matter which will require the most careful attention. Gold, as is said above, now stands at about half its former value. The cause is that the demand for gold has diminished. The actual circulation of gold is very generally abandoned and the great central banks have reduced their claims on relative gold-coverings considerably. Should a return to pre-war conditions in this respect set in, the inevitable consequence would be an enhancement of the value of gold which would make resumption of gold-payments much more difficult than it otherwise ought to be and which would expose countries

with effective gold standards to a prolonged and probably most serious depression. It seems, therefore, to be a common interest for the whole world that such a rise of the value of gold should be avoided. Thus all countries should abstain from measures for reintroducing an actual gold circulation and the central banks should content themselves with their present standard of gold-covering. Countries which like the United States are in a position to draw gold to themselves from the rest of the world should abstain from doing so. The stabilization of the value of gold will clearly require, in the next years, a close coöperation of all countries.

We should on this subject constantly have in mind that the stability of the value of gold has very seriously suffered by the diminished demand for gold here referred to. Gold has never been a very stable standard of value; but it will henceforth, as far as can be judged, be a more inferior standard than it used to be. From this, friends of the gold standard may draw the conclusion that the old demand for gold should be restored, even at the cost of a new

price-revolution and a prolonged period of industrial depression.

Theoretically it may, on the other side, be argued that the present situation should be used to abolish gold altogether as a standard of value and go over to a more rational standard, based on index numbers. Every country is, of course, free to do that for itself, but it seems practically sure that the time for any sort of international agreement on a common standard of this nature is yet distant. Schemes for creating a new world money, which now and then are suggested in the papers, mostly involve the flooding of the world with additional paper money and, indeed, make themselves attractive to the general public only by measures which have ultimately this effect. That the way out of the present difficulties, however, cannot be sought in any such direction seems clear enough.

Which policy in regard to gold will in reality be preferred is very difficult to predict. But in any case it is of paramount interest that all countries should act in this delicate matter in concord with one another and in clear understanding of the whole bearing of the problem.

SOME OBSERVATIONS ON PROFESSOR CASSEL'S PAPER

By B. M. ANDERSON, JR., PH.D.

National Bank of Commerce, New York City

Anything from Professor Cassel's pen is sure to be interesting and important. The paper under discussion raises a great many important issues. I shall content myself with a series of comments upon certain aspects of it rather than try to give a systematic treatment to the subject of the paper as a whole.

The basis of Professor Cassel's doctrine is a very rigorous form of the quantity theory of money. For this theory the level of prices is a simple function of the number of exchanges on the one hand, and the quantity of circulating medium on the other, and it makes no difference whether the circulating medium is made of gold or of paper, or whether the paper is redeemable in gold or irredeemable. It is purely a question of the number of monetary counters. The number of exchanges, moreover, is commonly confused by quantity theorists (including Professor Cassel in the paper before us), with *the stock of commodities*, although in point of fact *the volume of exchange* is primarily a function of the amount of speculative turnover. For every bushel of wheat that came to the Chicago grain market in 1915 there were sixty-two bushels sold in futures alone, to say nothing of an enormous volume of spot transactions. Volume of exchanges may be very great or may be very small with a given stock of commodities. With a given stock of commodities it may vary radically in the same market from time to time,

and it may vary greatly as among different markets at the same time. A general discussion of the quantity theory is not called for in this connection and the writer contents himself with reference to his book, *The Value of Money*, in which he has sought to demonstrate the fallacy of that general type of reasoning. The interest here is in seeing certain consequences that flow from the quantity theory in connection with the problem of the international exchanges, and certain errors in Professor Cassel's conclusions which the employment of the quantity theory involves.

Professor Cassel's position appears to be that the international exchanges are primarily governed by what he calls the *purchasing power parity*, that is, by the relative levels of prices in two different countries, the price level in each of the two different countries being determined by the quantity of money and volume of trade in each country. Any deviation in the exchange rates from this purchasing power parity he regards as abnormal, temporary and unimportant. Thus, he says, "When the exchanges move against a country people generally explain it as a result of an adverse balance of trade, but this explanation is obviously quite inadequate if the deviation of the exchanges is considerable, and has more than a temporary character." Again, he refers to such factors as "distrust in the future of the monetary standard" as merely a

cause for temporary deviation from the exchange rates indicated by the purchasing power parity, and argues that, when deviation from the purchasing power parity occurs, influences are set in motion which would "tend to enhance the value of the B-money in A and bring it up again to its purchasing power parity, which is, therefore, the point of equilibrium for the exchanges."

The notion that exchange rates and gold movements between two countries, both of which are on the gold standard, are governed by their relative price levels, is a very indefinite and inaccurate notion. It is true that the prices of articles which enter into international trade have a great deal to do with international gold movements, and with the international exchange rates. If such prices are high in country A and low in country B, the tendency will be for goods to leave country B and for gold to come to country A, and for the exchange rates to be adverse to A and to be favorable to B. But articles of international commerce make up a relatively small part of the articles which must be considered in determining price levels. Many commodities are too bulky to move far. The whole body of wages and house rents, to say nothing of real estate prices and the prices of local securities, have remote and incidental control over the gold movements. Further, as is well known, discount rates, international banking transactions and the like, normally and regularly influence the gold movements and the exchange rates in a very powerful way. Further, a country in which the general level of prices is rising in a period of prosperity may

easily draw gold away from a country which is going through a period of depression, and in which prices are falling. Gold reserves may be piling up in the latter country and not needed for business expansion there, while gold is needed in the country with active business and rising prices, and higher discount rates may easily tempt it away from the country of falling prices.

Even though something be granted, however, to the validity of the notion that comparative price levels¹ affect gold movements and international exchange rates in a situation where two countries are both on the gold standard, and where the movement of gold is free, it by no means follows that this will hold true in the type of case which Professor Cassel is discussing, namely, exchanges among countries, all of which are on an *interconvertible* paper money basis. *Here there are simply no parities at all.* Here there is no possible basis for stability, except as one of the countries with a stronger position may "peg" the exchanges of the weaker country by giving it unlimited credit—and even this as a long run matter is exceedingly doubtful and difficult. The great fact which governs the value of irredeemable paper money is, not its quantity directly, but rather the prospect of its being redeemed in gold.² The quantity of paper outstanding will, of course, greatly affect this prospect, just as the volume of debt which an

¹ The writer ventures to refer to the chapter in his *Value of Money* on the "Quantity Theory and International Gold Movements," pages 315-320.

² That this is not the whole story is indicated in the writer's chapter on "Dodo Bones" in *The Value of Money*.

individual owes will affect the prospect of his being able to meet his debts and the standing of his credit in the markets. But a large volume of paper money issued by a strong government may easily have a higher value per unit than a smaller volume of paper issued by a weak government. Inconvertible paper money is at the mercy of every rumor affecting the credit of the governments. Political events, battles, policies in taxation, the success or failure of great funding loans, the volume of floating debt of the government apart from the circulating paper money, labor conditions, the export and import situation, the prevalence or absence of social unrest, the strength or weakness of political alliances, the volume of gold reserves, the vigor or timidity of the government's gold policy—all these things, changing day by day, govern the value of the paper money, govern its standing in the international exchange markets and influence powerfully the level of prices within the country. There are three great markets in which the value of such paper money may be measured. One is the foreign exchange markets; the second is the gold market, if active, open and free trading in gold is permitted; the third, the markets for commodities, securities, land and labor. The matter has been elaborately worked out for the period of the greenbacks in the United States from 1862 to 1879. I would refer here to Wesley C. Mitchell's well known studies, and particularly to his *History of the Greenbacks*. Variations in the value of the greenbacks were measured in all three of these ways in the United States during this period. The prices of gold in the free gold market in New

York and the price of sterling exchange moved very closely together. The prices of commodities in the United States moved more slowly. If, however, the curves for the standing of the greenbacks in those three great markets are plotted, the general parallelism among them is very striking. There was always, however, a substantial lag for the movements of commodity prices. Certainly, therefore, it could not be said that the course of commodity prices governed the exchanges. The more highly organized exchange market moved *first* and the less highly organized commodity markets responded less rapidly to changes in the value of the greenbacks, growing out of variations in the world's belief in their prospect of redemption.

In recent months the same thing has happened in Germany with mark exchange and commodity prices. When the exchange rate was four or five cents (American) to the mark, a distinguished European economist, reasoning on the same basis that Professor Cassel is now employing (namely that the purchasing power parities would govern the exchange rates), presented the fact that prices in Germany had not risen as fast as the mark had fallen in the international markets, and urged that consequently a rise in marks was to be expected. The prediction failed. Marks continued their downward course until they reached one cent per mark. Prices in Germany, though they have not risen as fast as the marks have fallen, continue to rise. The purchasing power parity did not govern the exchange rate, and does not govern it. Rather, both the internal purchasing power of the mark and its external standing are

governed by more fundamental forces, namely, the *value of the mark*, which primarily reflects the degree of expectation that it will some day be made good in gold. This expectation has steadily diminished as Germany's troubles and difficulties have become more apparent. The increased issue of marks, indicative of continued weakness on the part of the German Government and leading to an increase of the burden on the Reichsbank, has of course accelerated the process.

The heavy adverse balances of trade of virtually all the countries of Europe are factors of first magnitude in affecting their exchange rates. In part, for countries like Germany and some others, the great excess of imports is a reflection of the rapid fall in the *internal* value of the paper money. People in Germany do not check their foreign purchases as the exchange rates turn against them, because they expect the rates to be still more adverse in the future, and hasten to buy all they can before the bottom drops out entirely. They treat their money like overripe fruit, and get rid of it before it spoils on their hands. In part, however, even for the European countries whose currencies are soundest, there are heavily adverse exchange rates because of the sheer burden of the balance of quick liabilities to the United States and other non-European parts of the world, due to the one-sided flow of foreign trade. For Britain, *e.g.*, the exchanges are burdened not only by the internal depreciation of the paper pound, but also by the adverse trade balance, and, in addition, by Britain's efforts to give credit to the Continent, through buying Continental exchanges, and

through selling on long time to the Continent. External depreciation has probably gone further than internal depreciation for the pound sterling. For some other countries external depreciation has probably not yet measured adequately the internal depreciation.

Professor Cassel rejects as "a popular idea," the notion that a shortage in commodities would cause a rise in prices, which would necessitate the creation of more money, declaring it "an obvious fallacy." In general, he minimizes the extent to which shortages of goods have occurred during the war, suggesting the figure of 10 per cent at one place as indicating the shortages of commodities, and indicating a 20 or 30 per cent shortage as apparently an impossible outside limit. That rising prices can occasion and do occasion an increase in note issue under an elastic banking system, is, however, one of the commonplaces of banking theory. John Stuart Mill³ gives it his sanction, agreeing with the contention of Tooke that "in point of fact, in every signal instance of a rise or fall of prices, the rise or fall has preceded, and therefore could not be the effect of, an enlargement or contraction of the bank circulation." (This relates to the period covered by Tooke's *History of Prices*, down to 1832.)

In the writer's view, Professor Cassel minimizes to a degree that is almost grotesque the extent to which shortages of goods have been brought about by the tremendous wastes and demoralized production of the last five years. In ordinary times the

³ *Principles of Political Economy*, Book 3, Chapter 24, par. 1.

world lives from hand to mouth. The accumulated stocks of goods, available for consumption at any given moment, are normally small. It was estimated before the war that England usually had on hand about a six weeks' supply of food, and that a six weeks' interruption of her shipping would consequently bring England to the verge of starvation, since the bulk of her food comes in from abroad. The great bulk of the wealth of the United States consists of real estate, railways and their equipment, trolley lines, telegraph and telephone systems and the like—fixed capital and land rather than wealth available for immediate consumption. Comparing the income of the people of the United States with their supply of consumable goods on hand at any given time in the year 1912, the writer feels safe in estimating that a four months' supply of consumable goods would be the outside limit of our current stocks in that year, and that cessation of production for anything like four months would have brought us to utter destitution.

Such a decrease and disorganization of production, and such a wasteful consumption as the World War brought about, necessarily curtailed the world's stocks so greatly as to make a price revolution inevitable. The world cannot live upon its accumulated wealth. Land, bricks, mortar, rails and bridges, houses and factories cannot be used for food or clothing. Only the current product, which makes a very minor part of the total wealth of the world, is available for immediate consumption. In measuring the effects of the war's waste upon prices, then, we must institute comparison not between the waste of the war and

the total wealth of the world, but rather between the waste of consumable goods in the war and the current stocks of consumable goods in the world. It is absurd to deny that the war has created great scarcities. It is in these scarcities that we must find the major explanation of the changes in the *gold prices* of goods that have occurred during and since the war.

These considerations make it clear also that when production and consumption come back to something like normal relations, when exports and imports come back to normal equilibrium, when stocks of goods are replenished again, when labor is fully and efficiently utilized and wastes and extravagance reduced, relief from high prices in the United States will have been brought about.

The countries in which the gold standard has been abandoned have, of course, a more thorny path through which to go. For some of them, as Austria and Russia, the difficulties of restoring their currencies may be so great that we may well suppose them impossible. For others, like Great Britain, the restoration of the gold standard in a reasonable time may be confidently expected. The restoration of the gold standard, even in Austria and Russia, may be looked for by the same course that Mexico employed two or three years ago when she frankly repudiated her unmanageable mass of paper money and proclaimed a new gold standard, making only hard money legal tender. It may indeed happen that the countries where monetary chaos has gone farthest will be the very first to come back on a hard money basis, through the complete unwillingness of their

people to accept any other kind of money. For other countries there may be a prolonged period during which a struggle will be made to restore equilibrium between taxes and outgo in the public budgets, and to fund the public floating debts, including the debts of the states to the banks of issue, with a consequent reduction in the volume of bank notes outstanding, and with the ultimate resumption of specie payments held in view.

One must protest, however, against Professor Cassel's statement that "the restoration of the old gold parities is, as everybody knows, quite out of the question." Some countries may be unable to reëstablish their old gold standards, but many of the countries of Europe will be able to do so, and most will at least be justified in making the attempt to do so. In any case it can be confidently asserted that no stability in international exchange rates will be possible until the currencies of the world are again at a fixed ratio with gold, and that the only way in which a currency can be kept at a fixed ratio with gold is to redeem it directly or indirectly in gold on demand. I say "directly or indirectly" wishing to allow room in the generalization for such cases as "gold exchange standard," under which the gold reserve is held in a foreign

country, and under which the currency of a country is redeemed in gold bills drawn on that foreign country, rather than in actual coin. This constitutes, however, merely a modification of the gold standard proper, and can work effectively only if actual gold can be secured at the end of the process. We must especially guard ourselves against the notion that any scheme for the *regulation* of the *quantity* of an *irredeemable* paper money can lead to stability, either in the internal or in the external value of that paper.

In summary: finding much that is interesting and important in Professor Cassel's paper, I limit my discussion to the points of dissent. I think that he minimizes the really important factors affecting the exchange rates, such as the trade balances, the growing distrust of irredeemable paper money, and the like, and that he is dealing with a myth when he speaks of "purchasing power parities" as governing exchange rates between countries, both of which have inconvertible paper money. The only parity that can have any meaning in international exchange rates is a gold (or silver) parity, and when gold is abandoned, "parity" ceases to mean anything. Stability in international exchange rates depends on the restoration of the gold standard.

DISCUSSION OF PROFESSOR CASSEL'S ARTICLE

By LORD D'ABERNON

Surrey, England

It is a keen intellectual pleasure to read Professor Cassel's brilliant statement on "The World's Monetary Problem" and to contrast it with the puerile inanities which form the basis of most

that is written and spoken on the subject.

To show how widely Professor Cassel's views differ from those generally held, it may be well to place in close

juxtaposition and in clear relief the popular view and those set forth in the article under review.

The popular view is that the exchanges will right themselves when trade resumes its normal course.

Professor Cassel holds that this return to the old basis is quite out of the question.

The rise of prices is popularly attributed to high cost of transport, to diminished output of labor, etc.

Professor Cassel holds that there can be no independent cause of a rise in the upward movement of prices other than a decrease in the total mass of commodities and an increased supply of money—the latter cause being in the present case incomparably the most important.

It is generally thought that an unfavorable exchange favors the export trade of a given country and impedes the import trade.

Professor Cassel holds that once exchange is stabilized, it is of no importance whether the level is high or low.

People generally explain a low exchange as the result of an adverse balance of trade.

Professor Cassel points out that this explanation is quite inadequate to explain considerable and non-temporary fluctuations. These can be explained only by inflation which has brought down the internal value of the monetary unit of the country.

The popular expectation is that the old exchange level can be restored by increased exports.

Professor Cassel holds that this is only possible where the low exchange has been caused exclusively by war-time prohibitions of export. Where

the cause is an internal depreciation of the monetary unit through an excessive supply of currency, a reduction of inflation is the only remedy.

The popular view is that a general rise of prices can be prevented by legislation against profiteering and the enactment of maximum prices.

Professor Cassel says that result is unattainable so long as the government is incessantly flooding the country with fresh money, and the bank rate is kept too low.

The popular view is that heaping up masses of gold in a central bank will improve the monetary standard.

This the Professor regards as an illusion, the value of the money of any country being solely determined by the scantiness of the supply of means of payment relative to the demand for means of payment. Unless the national currency is on a par with gold, gold in the vaults is not much more than an empty show.

It is generally believed that a higher value would be attained by the national currency (leading to improved exchanges and a reduced cost of living) if the government of the country can reestablish its credit.

This view the Professor holds to be false, the sole reason of the depreciated currency being superabundance.

The general view is that prices will by and by come down to their old level by themselves. This view is held by the Professor to be quite groundless in the absence of definite measures of monetary policy.

The above enumeration by no means exhausts the list of articles of popular currency belief which Professor Cassel holds to be totally erroneous and misleading.

The question is, are these statements merely scintillations of academic paradox written as intellectual amusement, or are they the expression of a complete theory of currency and prices, fundamentally different from the vague beliefs on which the slipshod monetary policy of nearly all the governments of the world is based? The two conceptions of the problem are so divergent that no compromise or half-way house is possible between them.

If the Professor is right, the monetary policy which is now being followed in most countries in the world is radically wrong, and will lead, unless modified, to an aggravation of the discontent, unrest and financial disturbance which now prevail.

If the Professor is wrong, it must be shown where the fallacy lies, and recorded facts must be explained and reconciled on some other general hypothesis.

Personally, I agree with Professor Cassel in nearly all his main conclusions, and I regard his paper as at once the boldest and the most clear-cut statement which has yet been made on the problem.

This is not the moment to discuss some minor differences, when general identity of view is proclaimed.

The facts recorded in the *Monthly Bulletin of the Supreme Economic Council*, and those presented still more strikingly in the *White Paper* (Command Paper 434) are not explainable on any other hypothesis.

Unless a general theory similar to that stated in the present paper is adopted, what explanation is there of the admitted fact that prices in each country have risen in direct proportion to the over-supply of currency, and that foreign exchange in each country has fallen in nearly similar proportion? Is any such result conceivable if superabundance of currency was either a non-existent cause or a minor cause? Do not the facts and figures point directly to the conclusion that currency is the dominant factor?

Great importance is attached in some quarters to the influence of excessive imports and inadequate exports, but in Russia where the disturbances caused by inflation are seen in their most extreme form, and where prices are higher and exchange is lower than anywhere else, there has certainly been no excessive importation of foreign goods; similarly with Germany and Austria. Does anyone contend that the fall of the mark to one-tenth its par value or lower has been caused by an excess of importation from abroad?

The conclusion of the whole matter is that a faulty currency policy during the war and still more since the war has been the main cause of high prices and low exchange, and of all the resulting unrest and disturbance. Until a wiser currency policy is adopted by the great nations of the world, there is no chance of permanent improvement.

A DISCUSSION OF PROFESSOR CASSEL'S ARTICLE

By IRVING FISHER

Yale University

There is nothing, I think, in Professor Cassel's able paper to which I cannot give a very hearty assent. Under these circumstances there seems to be no need for me to attempt any lengthy comment. I shall, therefore, merely restate, briefly, what seem to me the salient truths brought out by Professor Cassel and add a little emphasis to the remedies available.

While, theoretically, there are many possible causes for changes in the price level, the master key is always, or almost always, monetary. Even during the great war, when some countries' scarcity of goods played a big part, inflation played a still bigger part. This inflation has, incidentally, cut the purchasing power of gold in two, primarily through the displacement of gold by paper.

Changes and uncertainty in the purchasing power of the dollar and other monetary units escape notice as such, yet they are, in actual fact, far more serious than changes in the foreign exchanges. Furthermore, the change in the rate of exchange is, for the most part, a reflection of changes in relative purchasing power. The franc is worth so little today in America because it will buy so little in France. The true remedy, therefore, is to stabilize the purchasing power of monetary units in each separate country, (1) by stopping inflation, which implies stopping excessive governmental expenditures; (2) by a proper control of banking, especially as to the rate of discount, and (3) if we wish a complete solution, by varying the weight of the dollar.

If the United States will set the example other countries will follow. The great practical question is to select the price level for each country which we wish to maintain.

Undoubtedly, we shall soon see arrayed against each other the forces favoring inflation and those favoring deflation. There ought to be in each country, I believe, a judicial commission to determine what real justice demands. Merely to resume specie payment is not necessarily to render contractual justice, if the specie in which the resumption is to take place continues to have only half the value it had before the war. On the other hand, we would be too drastic if we attempted to go back to pre-war price levels. There has been a veritable "price revolution." The present high altitudes are not much above the levels of two or three years ago. Meanwhile, a great mass of contracts have come into existence, including government bonds. If all countries should deflate to restore the pre-war price level the French war debt, under which France is already staggering, would virtually be multiplied by three, for her present inflated price level represents a three-fold depreciation of the franc.

I imagine that a judicial commission, taking testimony as to contracts now outstanding and the price levels at which they were started would conclude that, while the immense amount of injustice created by the price upheaval of the war cannot be undone, the amount of injustice will be less if a

price level is chosen for the future, only slightly below the present price level, say 5, 10, or 15 per cent, varying in different countries.

Why should we not thus judicially and deliberately choose new price levels for our new world? In other words, why not choose anew our sovereign, franc, mark and dollar?

What the coins representing these monetary units *weigh* is of no consequence compared with what they *buy* and if we once decide on what they ought to buy, that is, what the general level of prices ought to be, it is easy to decide what the weight of the respective monetary units shall be to start with.

I do not mean that we should immediately drop down 5, 10, or 15 per

cent. There should be a gradual approach, an inclined plane or gang-plank, from existing price levels to the permanent price level decided upon, descending perhaps one-half of one per cent per month, or whatever other rate is, after careful consideration, found to be best.

I shall not attempt here to restate the plan, which I have so often advocated, of stabilizing the dollar, but take the liberty of referring the reader to my book by that title, now out, which attempts to give the full argument for stabilization for which, in some form, the needs of the times cry aloud.

If we once stabilize each individual monetary unit, we shall thereby also stabilize international exchanges between them.

DISCUSSION OF PROFESSOR GUSTAV CASSEL'S "PRICES AND THE MONETARY PROBLEM"

By WILLIAM A. SCOTT

University of Wisconsin

Professor Cassel's diagnosis of the monetary and price problem which now confronts the world is, in my judgment, confused and my own confidence in the value of the remedies he suggests is weakened by his loose use of the term inflation and his exclusive reliance upon the quantity theory of prices.

His test of the presence or absence of inflation appears to be prices. If their level has risen, he concludes that inflation is present, whether the immediate cause of the rise be the cheapening of gold or the depreciation in the incontrovertible currencies of Europe. There would be no harm in such a use of the term if he did not rely chiefly upon inflation for his explanation of

the change in the price level. To conclude that there is inflation whenever there is a rise in the level of prices and then to explain the rise by inflation is to reason in a vicious circle and to lead nowhere.

The quantity theory of prices is equally confusing and valueless in the present discussion. To refer to that old formula, in a discussion of the ultimate causes of price changes, is to misconceive the problem and to follow a false scent which will lead back to the point from which the start was made and throw no ray of light upon the dark places.

As I see the situation, there are three fundamental problems now awaiting

solution which, in importance, have precedence over all others. They are the increase in the production of staple commodities; the resumption of specie payments in Europe; and such a revision of the budgets of the governments of the countries which were engaged in the World War as will enable them, out of current revenues, to pay current expenses, the interest on their public debts and an annual sum sufficient for the accumulation of a sinking fund, adequate to the payment of the principal of their debts in a reasonable period of time. Of course, these problems are not entirely independent of each other, either in origin or in solution. The solution of one will help in the solution of the others and no complete and final solution of one is possible without the solution of the others, but they are sufficiently independent to warrant their being attacked separately.

For the solution of the production problem we need, primarily, peace, including a league of nations or some other settlement of our post-war international political problems, the removal of embargoes on commerce and the restoration of practicable working relations between laborers and their employers.

The problem of the resumption of specie payments can be solved only by the retirement of the inconvertible notes, which the governments of Europe issued during the war, for the purpose of forcing a loan from the people, and the reduction of the issues of European banks to such a volume as will restore their convertibility into gold on demand. Any attempt to compromise on this matter in the manner suggested by Professor Cassel, or

in any other way, in my judgment, will only prolong the agony. This is not an insoluble problem and its solution within the next five years will be easier and attended with less disturbance than at any subsequent period. The solution will be found, however, only if economists and statesmen resolutely face the problem. If they entertain the feeling that the situation is hopeless and that past experience can no longer serve as a guide, and toy with such nebulous ideas as are involved in Professor Cassel's "purchasing power parity," we may wallow in the present "slough of despond" for an indefinite period.

The difficulties of the budgetary problems of the governments of Europe can hardly be exaggerated, but they cannot be lessened or removed by beclouding the question at issue. The debts incurred during the war, including those in the form of notes now circulating as money, must either be paid or repudiated, and the financial consequences of these two methods of procedure will not be so different as at first glance they appear to be. The debts in question are mostly domestic, and, if they are paid, taxes sufficient to meet the annual interest charge and to build up an adequate sinking fund must be levied on and collected from all the persons subject to taxation, and turned over to the holders of bonds and other public securities. If they are repudiated, a tax likewise will be levied but exclusively on security holders. Assuming that all security holders are taxpayers, and all taxpayers security holders, an assumption not very remote from the facts, the resulting financial position of each citizen will depend upon whether he loses more as

taxpayer than he gains as a public security holder or vice versa. The balance of gains and losses will, of course, vary with different persons and will not be the same in perhaps any case under the debt-payment and debt-repudiation plans, but in many cases the difference will not be great, and in every case there will be gains and losses to be balanced under either plan.

Of course, a combination of the two plans is possible, amounting in substance to partial repudiation or a scaling of the debts. It is this which Professor Cassel suggests when he recommends that "every attempt at the restoration of the old value of money" should be abandoned. The old value of money and the old price level are not identical, though his method of reasoning forces him to maintain that they are. The old value of money in the gold-standard countries is the value of the amount of gold constituting the unit of the value, whatever that may be, and, if that value is less now than it was formerly, as it doubtless is, the restoration of the value of money would not restore the old level of prices, but it would restore the convertibility into gold of all forms of the currency of each country.

The solution of the above mentioned problems will restore the exchanges to their pre-war state and will relieve the banks of the world of the greater part of the strain under which they are at present operating. The chief cause of their present overexpanded condition is the support they have been obliged to give their respective governments in the financing of the war. As soon as the finances of these governments have been placed upon a sound basis, the banks will be relieved of that obligation. Another cause of expansion is speculation which is everywhere rampant at the present time, especially in this country. For the support of this the banks are themselves responsible and the remedy for whatever amount of over-expansion is due to this cause they have in their hands, and they should apply it vigorously and without further delay in the form of increased discount rates and greater discrimination in the granting of credits. To expect the banks to accomplish more than this amount of deflation, to use a widely current term, is to expect the impossible, and to rely upon bank deflation as the chief element in the solution of present price and monetary problems is, in my judgment, to court disappointment and to delay a real solution.

OBSERVATIONS ON ARTICLE OF PROFESSOR GUSTAV CASSEL

By WALTER LICHTENSTEIN

Foreign Trade Department, First National Bank, Chicago, Ill.

In general, I find myself in complete agreement with Professor Cassel, and it is interesting to note that he emphasizes certain aspects of the question of high prices with which the public is

altogether too unfamiliar. The statement that "it is important to root out the popular fallacy that a general rise of prices can be prevented by legislation enacting maximum prices and

inflicting punishments on speculators, while the government is incessantly flooding the country with fresh money and the bank rate is kept too low," cannot be repeated too often. The popular fallacy, to which Professor Cassel refers in the paragraph quoted, is leading to agitation in this country, which, if sufficiently long continued, will have disastrous effects upon business enterprises. If our large employers of labor are to be compelled to pay high wages, and at the same time are afraid to charge sufficiently for their products for fear that they may go to jail if they do so, it is obvious that we shall soon face a complete stagnation in business. As stated in several recent papers, it is not at all desirable for this country that there should be a very sharp reduction in the present price levels, and it would be well if we all realized that any reduction in price levels ought to be rather gradual. To be sure, Professor Cassel is probably not correct in believing that the present price levels should be maintained for all time. As Professor Wesley C. Mitchell of New York showed at a recent meeting of the American Economic Association, the experience of the past teaches us to believe that in course of time the level of prices will become again more nearly what we regarded as normal before the war.

Professor Cassel's explanation of ratios of exchange between various countries is interesting and illuminating. He makes it perfectly clear that the panacea put forth recently by various gentlemen for doing away with present exchange difficulties by creating a kind of international currency, would not solve our difficulties at all,

since, according to his view, the exchange ratios do not depend by any means entirely upon the question of the relation of monetary units to gold, but to a large extent upon the purchasing power of the currency of any country within that country itself. It is therefore evident that if every country had the same currency it would not mean that this currency would necessarily be of identical value in every country, and international bills of exchange would not by any means be payable at par the world over.

In his discussion at the meeting of the American Economic Association, Mr. James B. Forgan agreed with, and in a sense anticipated the remarks of Professor Cassel regarding the desirability of raising discount rates. Professor Cassel is entirely correct in stating that this was too long delayed from a theoretical point of view, but, on the other hand, there were many practical considerations why the governments did not dare to do what undoubtedly their financial advisors thought desirable.

Professor Cassel has not touched upon one remedy which might aid the situation very much, and which has been discussed at considerable length in the book of Mr. J. M. Keynes, *The Economic Consequences of the Peace*, recently published. According to Mr. Keynes, and he undertakes to prove his points by means of a wealth of statistical material, the trouble with the whole world at present is that it is laboring under a mass of governmental debts which can never be paid, but which will be a source of continuous irritation and uncertainty. Probably the whole world, including the United States, would be better off if some

international conference would be called, consisting of leading financiers and economists to consider carefully the question of the situation in each and every country, and on this basis readjust the financial obligations of the various countries, one to another. This would bring about a sanitation of economic relationships which would lift a burden from the shoulders of everyone engaged in productive activity. The world at present is much like a bankrupt concern which, nevertheless, is continuing to stagger on without trying to reach some adjustment with its creditors. In addition to an international economic conference, the question might well be raised in many of the countries whether it would not be better for everyone concerned if the internal debt were

cancelled. If we take a country like Germany, for example, its internal debt and its international obligations are such that in one form or another everyone having means at all will face what amounts to a recurrent confiscation of property. Would it not be better if the state were to frankly repudiate all its internal debts and permit everyone start afresh? After all, such a repudiation would strike those very same people who will suffer from a system of taxation which is to be regarded as being equivalent to gradual confiscation. An old proverb says, "An end with frightfulness is to be preferred to frightfulness without end." It seems to me that this proverb might readily be applied to the present financial state of the world.

A DISCUSSION OF PROFESSOR CASSEL'S ARTICLE

By A. BARTON HEPBURN

Chairman, Advisory Board, Chase National Bank, New York City

I have read Professor Gustav Cassel's paper with very great interest and general approval. I take exception to some things, however. *What has Happened to the World's Monetary Standards* is well stated.

Like all devotees of the quantity theory of money, however, Professor Cassel gets the cart before the horse. Under the heading "Popular Ideas," in arguing that the quantity of money fixes the price level and in combating popular ideas which are erroneous in his opinion, he says, "This is the case, *e.g.*, when people speak of high wages, high cost of raw material, etc., as the causes of the general increase in prices." The cost and hence the

prices of finished goods are represented mainly by the cost of labor and the cost of raw material. When the cost of these items is increased, the cost of the finished product is necessarily increased, and high or higher prices inevitably result. This is so manifestly true that it seems strange that anyone can argue that the quantity of money is alone responsible for increased prices. People do not actually borrow money in advance with which to go shopping, even when they arrange credit in advance. The issue of the credit instrument in payment invariably follows the transactions. People buy products and then they seek some sort of credit

with which to pay for the same. This may result in increased bank credit; it may result, in certain instances, in increased bank circulating notes, but the increase of the credit instrument, whatever form it may take, follows the business transaction, and is the result and not the cause. When at the beginning of the European war, because of the limited supply of commodities, different nations began bidding against each other in order to supply their needs, that bidding necessarily increased the price. Then these respective bidders sought credit as a means of payment. It was the competitive bidding that advanced the prices, not the creation of credit instruments with which to pay for commodities.

The fact that Europe, in the first two years of the war, sent us a billion dollars in gold in payment for their purchases was not what advanced prices, nor would the cause have been money, had they made loans in this country instead, to pay the debts incurred. It was their necessitous and insistent demand for the product and their bidding against each other that advanced prices, and not the quantity of money or credit instruments. Credit instruments, whether currency or otherwise, are not created in advance of business transactions, but are created to enable the party purchasing to consummate the transaction by means of payment. Payment is a subsequent event.

I agree with Professor Cassel that the world is suffering at present most severely from the uncertainty of the internal value of money in the different countries. Many years ago my bank correspondent in Amsterdam gave me

a luncheon which was attended generally by the bankers of Amsterdam. I recall one of the bankers telling me that during our Civil War he purchased a large volume of United States bonds, paying for the same in European exchange, which of course was the equivalent of gold at that time, at 43 cents on the dollar. He held these bonds until after the resumption of specie payment in 1879 and later sold them at 118. Gold went to a premium in the United States in 1862 and remained at a premium until the resumption of specie payment, January 1, 1879. During this interval we had the "greenback" craze and the doubt as to whether the United States would redeem its obligations in gold according to their tenure had the effect of greatly depreciating our currency. Our legal tender note was worth at one time only 40 cents on the dollar. From the close of the Civil War till January 1, 1879, there was a continuous trade balance in favor of the United States. The balance of trade is only one factor in determining exchange; the doubt as to the real value of a country's currency is another, and very important element to be considered.

Professor Cassel says also, "In the whole world the rates of discount have been too low during the war." That is manifestly true. If our government had offered its bonds at the current rate of interest instead of appealing to the patriotism of the people and resorting to a propaganda in order to place the issue, the bonds would have stayed at par or above and the public would have continued to own them instead of selling them, forcing them into money centers, and very largely into the banks. The apparent saving

in the low rate of interest cost people many times that rate of interest in the depreciation of their securities and the inflation of prices generally.

Prices generally depend upon the law of supply and demand. Money is no exception. High prices lessen the demand and tend to bring about a stable equilibrium. It is always in the interests of commercial communities to charge fair rates for money as it is to charge fair rates for any other article or service. Had our government paid fair rates they would have kept their securities at or about par, kept them in the hands of the public and made it much easier to overcome high prices which are the result of inflation.

Our government spent over a billion dollars purchasing its own securities in the market, under the mistaken idea that they were sustaining the prices of the same. The prices, nevertheless, continued to recede. Had they not adopted this policy, the interest being certificates in the banks would be lessened by that amount, and our commercial and financial interests would be in that much better position.

We can have no deflation until this floating debt of the government carried by the banks in the form of interest-bearing certificates, which now exceeds three billions of dollars, is retired. The banks will then have sufficient funds to supply the commercial demands of the business community, and prices will go down from their present dizzy height to a more normal level.

I cordially endorse what Professor Cassel says about the reduction of state expenditures. Until the incomes of the governments recently at war equal their expenditures; in other words, so long as they go on increasing their debt, deflation is impossible and the uncertainty of the value of their currency is intensified.

This is a question which must be settled by each country itself. England's trade balance, according to Lloyd George, is now favorable and her income will, for the present fiscal year, equal her expenditures. England is in a position to "come back" and resume her position as one of the leading commercial nations of the world. The continental countries are by no means in as favorable a condition.

COMMENTS ON PROFESSOR CASSEL'S ARTICLE

By EDWIN CANNAN, M.A., LL.D.,

Dean, Faculty of Economics, University of London

I AM entirely in agreement with Professor Cassel's explanation of the general rise of prices and of what is called the "dislocation of the exchanges." I applaud his exposure of the folly of supposing that a hoard of gold which no one may draw upon is of some immediate use in supporting the value of a paper currency, and I

welcome his support for the doctrine which I have (without much success) been trying to teach the public, that the high profits, supposed to be due to some witchcraft called "profiteering," are simply the result of a depreciating currency which means a rise of prices between the time of buying and the time of selling. As to reme-

dies also I am in agreement with him. I am only inclined to add a little without taking away anything.

First, I think it should be clearly understood that a "discount policy" is not likely to work, unless those who have to put it in force recognize that the purpose of it is to reduce the currency, and are themselves in sympathy with this purpose. I do not believe, for example, that the Bank of England could bring the pound up to its proper value of 113 grains of fine gold or \$4.86 by putting the bank rate up, unless the other banks and the government saw that what was wanted was to reduce the outstanding amount of bank notes and currency (usually called "treasury") notes, and were really desirous that the reduction should take place. Consequently, I put more faith in direct action for reducing currency. In England, at any rate, it is perfectly easy for the government to reduce the bank-note currency by a very large amount in a very short time and without any expense, but with considerable profit. Gold equal to a hundred and thirteen million sovereigns is held by the Bank of England against its notes. The notes are convertible, but if a private person presumes to convert them and then to export or melt the gold, the government can and does prosecute him; no one, however, can prosecute the government itself for drawing out and exporting as much gold as it can present notes for. The British Government, therefore, unlike all other institutions and persons, is able to procure with £1 what will pay a debt of nearly \$4.86 in America, since it alone is able not only to get five sovereigns with a £5 Bank of England note but

also to send the sovereigns abroad to be sold for what they will fetch. If, as is probable, it shrinks from thus affronting the worshippers of "gold backing," it can still reduce the currency notes by the simple process of getting some of them in by taxes, or by borrowing at interest, and cancelling them. Of course, any of these methods will tend to cause an immediate rise in the money market rate of interest, but I do not think a rise so caused would excite nearly so much opposition as what would be called an "artificial" rise brought about for the purpose of reducing the currency.

Secondly, I think it is necessary to insist strongly on the fact that each country acting alone, however indebted and poverty stricken it may be, has the power of bringing its money—its unit of account—into some fixed relation with gold and keeping it there. It may be impossible, or if not impossible very undesirable, for Germany to bring the mark up to the value of 24 cents, but it is quite possible for Germany alone to fix the mark at 1 cent or some rather higher figure, and very desirable that it should do so. To cure the violent variations in exchange which are the real evil of the "dislocation," what is required is for each of the countries not at present on a gold standard to come back to that standard, no matter, so far as civilization in general is concerned, what particular rate each of them may, having regard to its own circumstances, find convenient. This is not a matter for international action, and nothing but harm is done by the perpetual suggestion that the United States or all the countries with the least depreciated currencies are to take steps to reha-

bilitate the more depreciated currencies of other countries.

It is only after civilization has been restored by the reestablishment of the common monetary unit, *i.e.*, an ounce of pure gold, which prevailed before the war throughout all the world except a portion of the east where silver was the unit and a few disordered localities in the west, that international action is admissible.

There is no need for the restoration of gold as a standard to cause a great additional demand for it. There is no reason for giving up the circulation of paper and taking again to pockets and tills full of heavy metal. We, in England, do not want sovereigns and half sovereigns again; we should have discarded them long ago, like the Scotch and Irish and the inhabitants of most of the white colonies, if our banks' convenience had not caused our legislature to persist in the prohibition of notes under £5. The stocks of gold in the banks and these hoarded away for the present by individuals are together quite sufficient to provide the reserves necessary for keeping the different paper currencies in their proper relation to each other and to gold. But the infirmities of reasoning power in the human race and the backward state of elementary instruction in economics are such that it is possible, as Professor Cassel fears, that the restoration of the gold standard may be accompanied by a large demand for gold for currencies and reserves, even if it takes place as the considered policy of governments. There is another possibility—that gold may be

restored as a standard by the people, independently of their governments. Tired of the perpetual depreciation of paper money, people have often refused to deal in it any more, and have taken, in spite of their government, to buying and selling in metal instead of notes; if this should happen, as we are told it has already happened in Mexico, there would necessarily be a large demand for gold for currency.

It may be, therefore, that the restoration of the gold standard, in the absence of corrective measures, may involve a great and inconvenient drop in prices when reckoned in that standard.

On the other hand, nothing of this kind may occur. Professor Fisher may be right in believing that the demand for and the supply of gold will be in such relation that prices in gold will not fall, but will go on rising as they went on rising before the war, and that to an inconvenient extent.

If pressed for a guess, I should be inclined to hazard that the immediate result of the restoration will be a fall of prices, but that the old rise would soon be resumed. The thing that is most unlikely is that gold would be very stable. When my grandmother was told by one of her sons that he intended to "trust in Providence," she retorted, "I never saw any good come of that!" If mankind wants a stable standard, they must bestir themselves to make one, and not trust that Providence will arrange that gold or any other particular metal shall always buy the same quantity of goods in general.

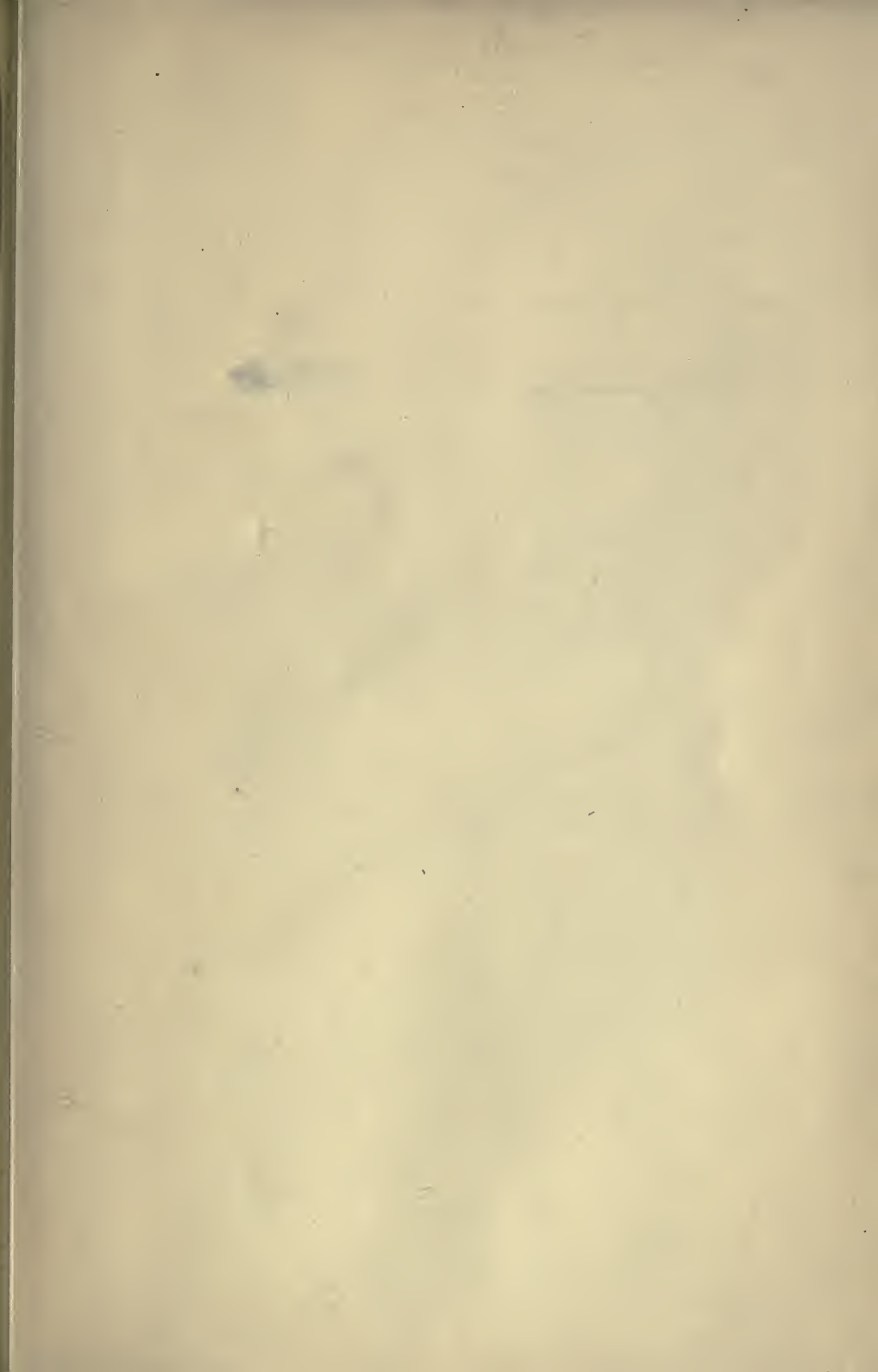
Index

- Agricultural coöperation, 190.
 — laborers, wages, 46.
- BALDERSTON, R. W. Present Day Industrial Conditions in Germany, 211-18.
- Bank credit expansion and production, 249.
- BEYER, O. S. Plans for Extending Coöperative Buying and Selling in the United States, 193-96.
- Bonds, profits from, 159. *See* Profits.
- Borrowing, cause of inflation, 250.
- BRYANT, R. C. Lumber Prices, 78-98.
- Budgets: family, prices, and, 137; millionaires and wage earners, 157.
- BUILDING CONDITIONS, HOUSING AND, Ernest T. Trigg, 74-77.
 — costs, 68-70.
- BUILDING MATERIALS, THE HOUSING SHORTAGE AND THE SUPPLY OF. Homer Hoyt, 67-73.
 — production of, 69, 70.
- Business: cycle, sequence of, 242; methods, coöperative, 191.
- BUTLER, B. S. Cooper, 103-10.
- BUYING AND SELLING, COÖPERATIVE, IN THE UNITED STATES, PLANS FOR EXTENDING. O. S. Beyer, Jr., 193-96.
- CASSEL, GUSTAV. Some Leading Propositions for an International Discussion of the World's Monetary Problem, 258-67.
- Clothing industry, labor and wages in, 63.
- CLOTHING, PRICE FACTORS IN MEN'S READY-TO-WEAR. Sigmund B. Sonneborn, 61-66.
- Conservation measures, prices and, 82. *See* Prices.
- Consumers: coöperative movement, 187; prices 17.
- COÖPERATION AND PRICES. Eugene H. Porter, 187-92.
 — agricultural, 190.
- COÖPERATIVE BUYING AND SELLING IN THE UNITED STATES, PLANS FOR EXTENSION. O. S. Beyer, Jr., 193-96.
 — congress, work of, 194.
 — distribution, phases of, 194.
- COPPER. B. S. Butler, 103-10.
 — demand for, 103; mining, 107; production of, 103.
- COST OF LIVING? HAVE PROFITS KEPT PACE WITH THE. Basil M. Manly, 157-62.
- COST OF LIVING? HAVE WAGES KEPT PACE WITH THE. Erville B. Woods, 135-47.
 — — — causes for high, 18; high prices and, 1; increase in, 139; meaning of, 136; Peoria, Ill., 140; Philadelphia, Pa., 140; profits and, 15961; solution of high, 18; wages and, 157; Washington, D. C., 140. *See* Wages.
- Costs, amortization, 65.
- Credit: difficulties, 223; expansion and prices, 247; restriction effects on wages and profits, 251; unions, organization of, 194.
- Creditor governments, debtor and, 227.
- CROSBY, OSCAR T. The Dangers of International Governmental Loans, 227-33.
- Currency, depreciating, 200. *See* Price Levels.
- Debtor and creditor governments, 227.
- Debts, war, effect of, 231.
- Deflation: problem of, 6; value of, 6.
- Demand: food, 220; supply and, 165.
- Depreciation reserves, 150.
- Depression, prosperity and, 234.
- Earnings: investments and, 150; wages rates and, 135.
- Economic situation, United States, 20.
- Exchange depreciation, effects of, 200.
- Exports, lumber, 97.
- FIGG, HOWARD E. Present Day Prices, 18-21.
- Financial balance of power, 228.
- Food: European supply, 219; German situation, 216; livestock supply, 215; lowering high prices of, 17.
- Foreign exchange, Goschen's theory of, 203.
- FOREIGN EXCHANGE, PRICES AND THE COURSE OF INTERNATIONAL TRADE. John H. Williams, 197-210.
- FRANKLIN, FABIAN. Gains and Losses Caused by Rising Prices, 1-7.
- FRIDAY, DAVID. Prices and Excess Profits Taxes, 163-69.
- GAINS AND LOSSES CAUSED BY RISING PRICES. Fabian Franklin, 1-7.
- GARRETT, PAUL WILLARD. American Control Over War Prices, 22-43.
- Germany: political situation in, 217; reparation payments, 199-210; unemployment, 215.
- GERMANY, PRESENT DAY INDUSTRIAL CONDITIONS IN. R. W. Balderston, 211-18.

- Gold standard countries, 198.
 Government salaries, 4.
 Governments, debtor and creditor, 227.
 GOVERNMENT LOANS, THE DANGERS OF INTERNATIONAL. Oscar T. Crosby, 227-33.
 — fixing of prices, 82.
- HANSEN, ALVIN H. The Sequence in War Prosperity and Inflation, 234-246.
 HOLLANDER, JACOB H. Inflation, 253-57.
 HOUSING AND BUILDING CONDITIONS. Ernest T. Trigg, 74-77.
 HOUSING SHORTAGE, THE, AND THE SUPPLY OF BUILDING MATERIALS. Homer Hoyt, 67-73.
 Housing: financing of, 75; increased construction, 75; labor involved in, 76; reasons for shortage, 74; shortage, 67; standardization of, 75.
 HOYT, HOMER. The Housing Shortage and the Supply of Building Materials, 67-73.
- Importation, over-, 203.
 Imports: foreign trade, 221; lumber, 96.
 INCENTIVES AND OUTPUT, THE PROBLEM OF. Ordway Tead, 170-79.
 INDUSTRIAL CONDITIONS IN GERMANY, PRESENT DAY. R. W. Balderston, 211-18.
 — situation, living conditions and, 215.
 Inflation: borrowing a cause of, 250; course of, 254-56; economic conditions and, 256; means of reducing, 247; prices, war and, 239-48; shortage of goods and, 241. *See* Prices.
 INFLATION, THE SEQUENCE IN WAR PROSPERITY AND. Alvin H. Hansen, 234-52.
 INFLATION. Jacob H. Hollander, 253-57.
 INFLATION, THE CAUSE AND PROCESS OF. George E. Roberts, 247-52.
 Interest: cause for lack of among workers, 172; definition of, 170; limitation upon, 178; stimulating the workers', 172.
 International exchanges, 261.
 Investments and earnings, 150.
- Jobs: analysis of, 172; scarcity of, and prolonged production, 181.
- Labor: in clothing industry, 63; shortage and lumber, 92; under-paid and over-paid, 20.
 Laborers, wages for agricultural, 46.
 Living: conditions and industrial situation, 215; cost of, and high prices, 1.
- LOANS, THE DANGERS OF INTERNATIONAL GOVERNMENTAL. Oscar T. Crosby, 227-33.
 LOSSES, GAINS AND, CAUSED BY RISING PRICES. Fabian Franklin, 1-7.
- Lumber: exports, 97; imports, 96, labor shortage and, 92, movements of prices of, 79; prices of, 83-90; production, 78.
 LUMBER PRICES. R. C. Bryant, 78-98.
- MAGNUSSON, LEIFUR. Movement of Wholesale Prices in Various Countries During and Since the War, 13-14.
 Management, industrial, 195.
 MANLY, BASIL M. Have Profits Kept Pace with the Cost of Living? 157-62.
 Material, pre-war, utilization of, 212.
 Mineral raw materials: dependence on, 99; quantity versus cost of, 99.
 — supply of United States, 100.
 MINERALS AS ESSENTIAL RAW MATERIALS. George Otis Smith, 99-102.
 Monetary problem: international, 265; stabilization of, 263.
 — standards, 263.
- MONETARY PROBLEM, SOME LEADING PROPOSITIONS FOR AN INTERNATIONAL DISCUSSION OF THE WORLD'S. Gustav Cassel, 258-67.
 Money: market, movements of, 236; purchasing power of, 3; rates, stock values and profits, 238; situation, international, 222.
- MUDGETT, BRUCE D. The Course of Profits During the War, 148-156.
- Output, standards of, 176.
 OUTPUT, THE PROBLEM OF INCENTIVES AND. Ordway Tead, 170-79.
- PAISH, GEORGE. The World Breakdown, 219-26.
 Paper, depreciated, and trade changes, 205.
 PATTERSON, E. M. Prospective Changes in the Price Level, 8-12.
 Petroleum, consumption demands of, 118-27.
 PETROLEUM RESOURCES OF THE WORLD, THE. David White, 111-34.
 PORTER, EUGENE H. Coöperation and Prices, 187-92.
- PRESENT DAY PRICES. Howard E. Figg, 18-21.
 Price level: excess profits tax and, 163; international, 200-02, lowered, 10; suggestions for, 10-20; world, 201.
- PRICE LEVEL, PROSPECTIVE CHANGES IN THE. E. M. Patterson, 8-12.
 Prices: abnormal, 16; beef, 52; cause of general rise of, 260; cement, 71; changes, 207; chemicals, 27; cloth, 61; clothing, 26, 66; common brick, 72; conservation measures and, 82; consumers', 17; copper and wages, 106; con-

- trol of, 19-22; credit expansion and, 247; factors in rise of, 2; food, 17, 25, 45; fuel, 27-40; future movements of, 94; government control of, 22, 41, 58, 82; hide, 52; high and low, rising and falling, 1, 3, 9; inflation and, 239; international, 208; loin, 53; lumber, 71, 79, 83; meat, 51-54; metals, 26; movements, 8; normal, 15; pork, 53; reduction in, 60; regulation of, 76; stable average, 21; stabilization of, 9; trimmings, 62; war and inflation of, 248; wages and, 248-251; wool, 55.
- PRICES, AMERICAN CONTROL OVER WAR. Paul Willard Garrett, 22-43.
- PRICES AND EXCESS PROFITS TAXES. David Friday, 163-69.
- PRICES, COÖPERATION AND. Eugene H. Porter, 187-92.
- PRICE FACTORS IN MEN'S READY-TO-WEAR CLOTHING. Siegmund B. Sonneborn, 61-66.
- PRICES, GAINS AND LOSSES CAUSED BY RISING. Fabian Franklin, 1-7.
- PRICE FLUCTUATIONS IN THE WOOLEN INDUSTRY. Katharine Snodgrass, 55-60.
- PRICES, FOREIGN EXCHANGE, AND THE COURSE OF INTERNATIONAL TRADE. John H. Williams, 197-210.
- PRICES, LUMBER. R. C. Bryant, 78-98.
- PRICES, MOVEMENT OF WHOLESALE, IN VARIOUS COUNTRIES DURING AND SINCE THE WAR. Leifur Magnússon, 13-14.
- PRICES, PRESENT DAY. Howard E. Figg, 18-21.
- PRICES, THE AFTER-WAR FALL IN MEAT. L. D. H. Weld, 51-54.
- PRICES, THE, OF TODAY. J. S. Crutchfield, 15-17.
- PRICES, THE TREND OF WHOLESALE, FOR THE PRODUCTS OF AMERICAN FARMS DURING THE WAR PERIOD. Clyde L. King, 44-50.
- Production: bank credit expansion of, 249; co-operative, 189; decreased, 260; increased, necessity for, 20; lumber, 78; marginal, 166; non-tax-paying, 167; prolonged and job scarcity, 181; world, 219.
- PRODUCTION?—MORE, SAY, WHERE D'YA GET THAT STUFF? Whiting Williams, 180-86.
- Profits: corporate, and cost of living, 161; cost of living and, 159; excess, taxes on, and war, 167; from bonds, 159; from public utility stocks, 159; increased, and excess profits tax, 169; industrial corporations, 166; making, elimination of, 194; problem, rate of, 148; recipients of, 15; stock values and money rates, 238; tax, and price level and excess, 163; versus service, 196; wages and, 149.
- PROFITS DURING THE WAR, THE COURSE OF. Bruce D. Mudgett, 148-56.
- PROFITS KEPT PACE WITH THE COST OF LIVING? HAVE. Basil M. Manly, 157-62.
- PROFITS TAXES, EXCESS, PRICES AND. David Friday, 163-69.
- Prosperity, and depression, 234.
- PROSPERITY AND INFLATION, THE SEQUENCE IN WAR. Alvin H. Hansen, 234-46.
- Public Utility Stocks, profits from, 159.
- RAW MATERIALS, MINERALS AS ESSENTIAL. George Otis Smith, 99-102.
- Reparation payments, Germany, 199-210.
- ROBERTS, GEORGE E. The Cause and Process of Inflation, 247-52.
- Salaries: government, 4; increase in, 4.
- Scarcity, actual, 2.
- Service versus profits, 196.
- SELLING, COÖPERATIVE BUYING AND, IN THE UNITED STATES, PLANS FOR EXTENDING. O. S. Beyer, 193-96.
- Shortage of goods, inflation and, 241.
- SMITH, GEORGE OTIS. Minerals as Essential Raw Materials, 99-102.
- SNODGRASS, KATHARINE. Price Fluctuations in the Woolen Industry, 55-60.
- SONNEBORN, SIEGMUND B. Price in Men's Ready-to-Wear Clothing, 61-66.
- Specie Payment Resumption, European, 209.
- Stock values, money rates and profits, 238.
- Supply, demand and, 145.
- Taxes: effect on clothing prices, 65; excess profits and increased profits, 169; on excess and war profits, 167; monopolistic enterprises and, 168; price level and excess profits, 163.
- TAXES, PRICES AND EXCESS PROFITS. David Friday, 163-69.
- TEAD, ORDWAY. The Problem of Incentives and Output, 170-79.
- Trade: causes for changes, 203, 205, 208; international, and monetary systems, 198.
- TRADE, INTERNATIONAL, FOREIGN EXCHANGE, PRICES AND THE COURSE OF INTERNATIONAL TRADE. John H. Williams, 197-210.
- TRIGG, ERNEST T. Housing and Building Conditions, 74-77.
- Unemployment: Germany, 215; enigma of, 235.
- Unions, credit, organization of, 194.
- Wages: labor in clothing industry, and, 63; copper prices and, 106; cost of living and, 157;

- position of wage earner in 1913, 138; prices and, 248, 251; problem of, 177; profits and, 149; recent rise in, 142.
- WAGES KEPT PACE WITH THE COST OF LIVING? HAVE. Erville B. Woods, 135-47.
- WHITE, DAVID. The Petroleum Resources of the World, 111-34.
- WILLIAMS, JOHN H. Foreign Exchange, Prices and the Course of International Trade, 197-210.
- WILLIAMS, WHITING. More Production? Say, Where D'ya Get that Stuff? 180-86.
- WHOLESALE PRICES, MOVEMENT OF, IN VARIOUS COUNTRIES DURING AND SINCE THE WAR. Leifur Magnussón, 13-14.
- WOODS, ERVILLE B. Have Wages Kept Pace With the Cost of Living? 135-47.
- WOOLEN INDUSTRY, PRICE FLUCTUATIONS IN THE. Katharine Snodgrass, 55-60.
- Workers: attitude of German, 212; company-town, 174; instruction program for, 176; living conditions of, 213; relation to work, 171; rotation of, 176; tenement, 174.
- WORLD BREAKDOWN, THE. George Paish, 219.



H American Academy of Poli-
l tical and Social Science,
A4 Philadelphia
v.87-89 Annals

**PLEASE DO NOT REMOVE
SLIPS FROM THIS POCKET**

**UNIVERSITY OF TORONTO
LIBRARY**

